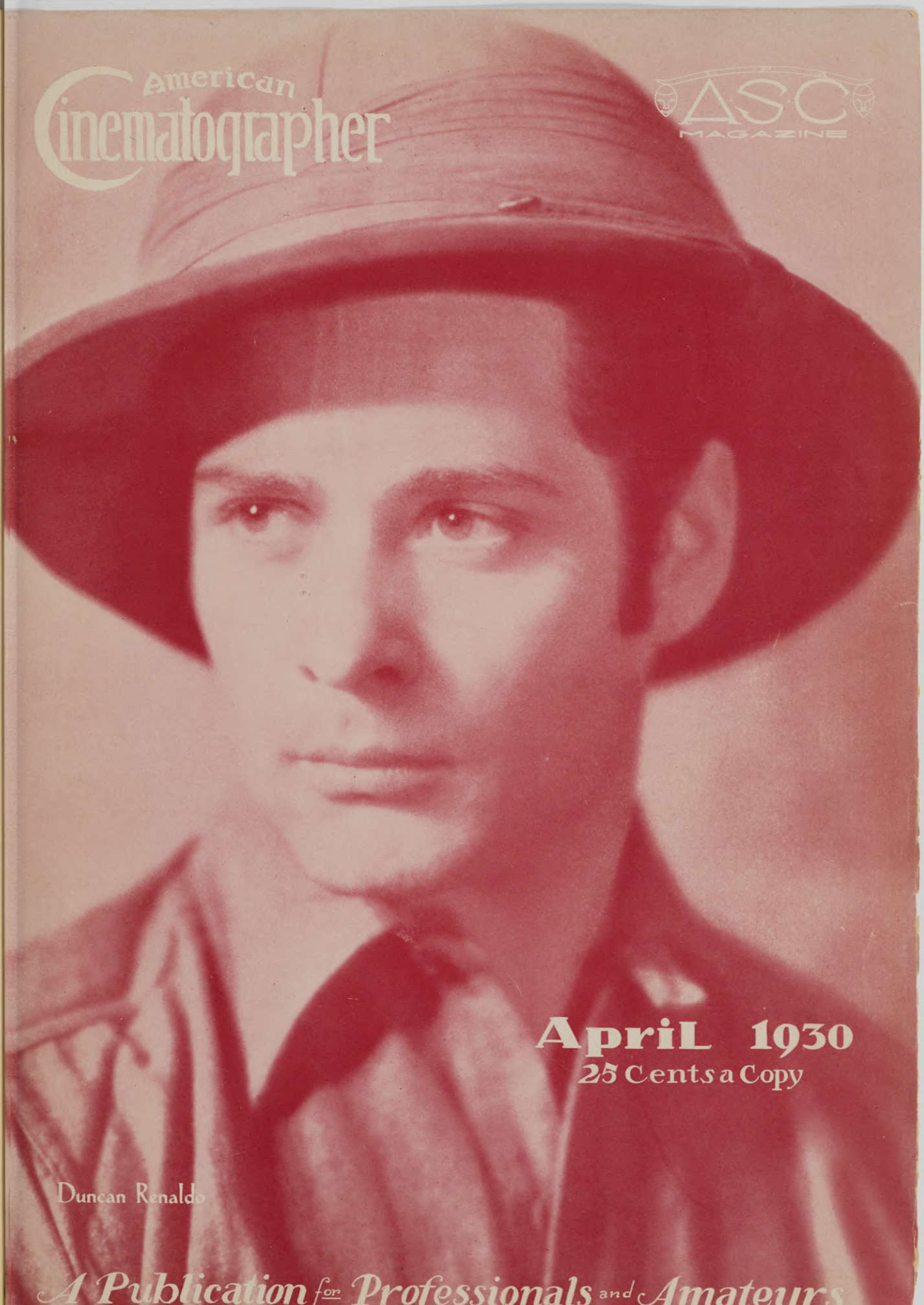
American Cinematographer

ASC MAGAZINE



April 1930

25 Cents a Copy

Duncan Renaldo

A Publication for Professionals and Amateurs

A FEW MORE OF OUR CURRENT PHOTOGRAPHIC SUCCESSES

NEGATIVE? DUPONT NATURALLY!

ESTABLISHED 1802

Cameramen

"The Texan"—Paramount	Victor Milner
"Young Eagles"—Paramount	Archie Stout
"I Love You"—R. K. O.	Ed. Cronjaeger
"Lady to Love"—M. G. M.	Merritt Gerstad
"The Girl Said No"—M. G. M.	Ira Morgan
"On the Set"—M. G. M.	Len Smith
"Montana Moon"—M. G. M.	Wm. Daniels
"Hell's Harbor"—United Artists	J. Fulton-Max Stengler
"One Romantic Night"—United Artists	Karl Struss
"Hello, Sister"—Sono Art-World Wide	Hal Rosson
"The Mounted Stranger"—Universal	Harry Neuman
"Officer O'Brien"—Pathe	Arthur Miller

"THE DUPONT TRADE MARK HAS NEVER BEEN PLACED ON AN INFERIOR PRODUCT"

Smith & Aller, Inc.

Pacific Coast Distributors

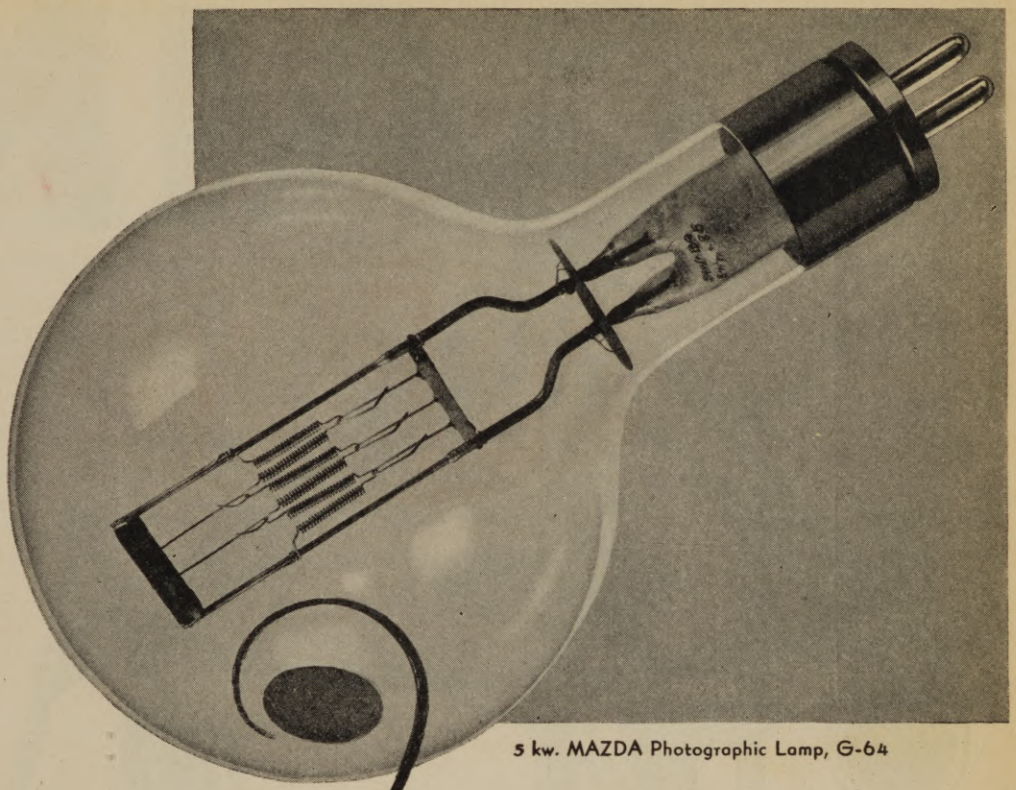
6656 Santa Monica Blvd. Hollywood 5147

for

DuPont Pathe Film Mfg. Corp.

35 West 45th St., New York City

MAZDA . . . not the name of a thing, but the mark of a research service



5 kw. MAZDA Photographic Lamp, G-64

This makes the difference

NOW, even a gradually accumulating residue of "bulb blackening" on the inside of high wattage photographic lamps need not put an end to their invaluable lighting service to the motion picture photographer.

MAZDA research has discovered a practical method of removing this black deposit from lamps otherwise as good as new. A teaspoonful of special crystalline tungsten powder, placed inside the lamp bulb before it is exhausted, makes the difference.

When blackening forms, remove the lamp from its socket, invert it so that the powder touches the blackened inner surface, rotate it gently, and friction removes the blackening. Nothing else to be done — your lamp is as good as new. Put it back in its socket, where it burns in an upright position, and the powder and residue return to the base.

Increased efficiency a great saving in the cost of motion picture production greater uniformity of illumination lighter equipments more easily handled many other benefits. Another reason for the leadership of G. E. MAZDA incandescent lamps as light sources for motion picture photography.

Join us in the General Electric Hour, broadcast every Saturday at 9 P. M., E. S. T., over a Nation-wide N. B. C. network.

GENERAL ELECTRIC

MAZDA LAMPS

AGAIN



MOLE-RICHARDSON, INC.

Offer the Industry a Perfected Piece of Production Equipment.

The new M-R Rolling Tripod makes a Blimp Camera MOBILE! It cuts out lost time in setting up for sound picture photography. It makes EVERY camera ready for travel shots at any time. It is so constructed that it can be placed absolutely rigid on the auxiliary legs. It can be leveled rapidly or elevated at will. The M-R Dolly (Rolling Tripod) is built according to Mole-Richardson Standards which means that every vital friction point is ball bearing and that it is a model of fine craftsmanship. You're going to find it an immensely practical aid to lowered production time and lowered production costs.

IF IT ISN'T AN IT ISN'T AN INKIE

MOLE-RICHARDSON, INC.

Studio Lighting Equipment

941 N. SYCAMORE AVENUE HOLLYWOOD, CALIFORNIA

AMERICAN CINEMATOGRAPHER

A technical and educational publication, espousing progress and art in motion picture photography.

Suite 1222 Guaranty Bldg. - - - - Hollywood, California

JOHN F. SEITZ, President, A. S. C.
HAL HALL, Editor in Chief and General Manager, A. S. C.
JOSEPH A. DUBRAY, Technical Editor, A. S. C.

BOARD OF EDITORS—John W. Boyle, William Stull and Herford Tynes Cowling

Vol. X CONTENTS No. 13

Page

CRANKING FOR UNCLE SAM, *by Raymond Evans* 9
SOUND REPRODUCTION IMPROVING *by Walter F. Eberhardt* 10
LICHT, ACHTUNG, KURBEL-HALT! *by A. K. Kittmer* 11
FEARLESS CAMERA COMPANY PRESENTS SILENT SUPER-FILM CAMERA, *by Hal Hall* 13
SOUND PERSONNEL AND ORGANIZATION, *by Carl Dreher* 15
AS THE EDITOR SEES IT 16
AMATUER MOVING MAKING, *by William Stull, A. S. C.* 29
PROFESSIONAL AMATEURS, *by William A. Stull, A. S. C.* 32
THE MOTION PICTURE, *by Will Hays* 36
FROM SAILOR TO FEATURED PLAYER 37

Frontispiece, Photographed by Elmer Dyer, A. S. C.

FOREIGN REPRESENTATIVES

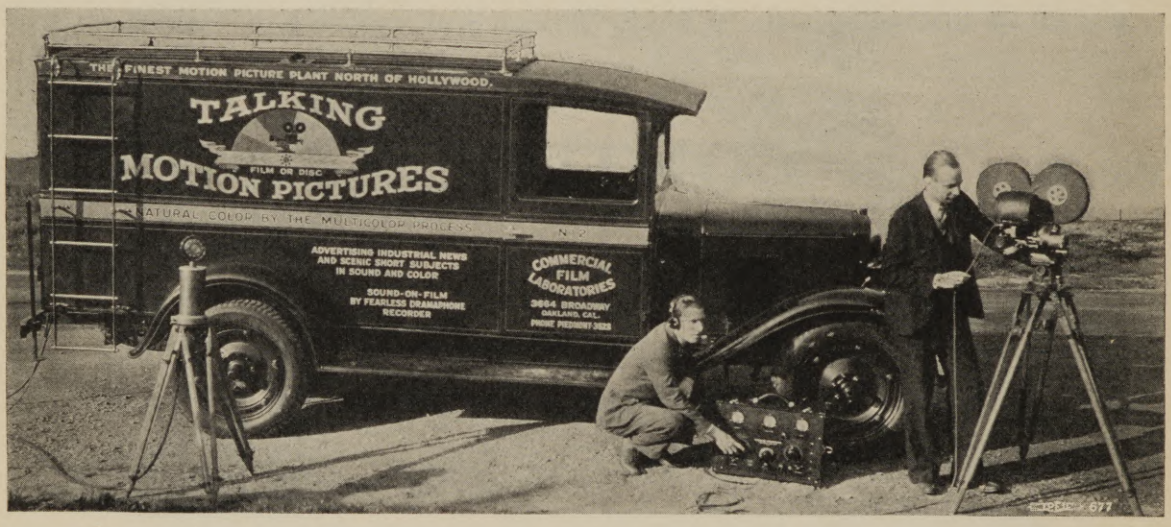
Georges Benoit, c-o Louis Verande, 12 rue d'Aguessau Paris, 8e
John Dored, Paramount News, Paramount Building, 1 Rue Meyerbeer, Paris IXe, France.
Herford Tynes Cowling, Eastman Kodak Co., Rochester, New York, Eastern Representative.

Published Monthly by THE AMERICAN SOCIETY OF CINEMATOGRAPHERS, INC., Hollywood, Calif. Established 1918. Advertising Rates on Application. Subscription: United States, $3.00 a year; Canada, $3.50 a year; Foreign, $4.00 a year; single copies 25c. Telephone GRanite 4274.

(Copyright, 1930, by the American Society of Cinematographers, Inc.)

and now... SOUND

for the finest motion picture plant north of Hollywood. The Commercial Film Laboratories in Oakland announce their entrance into the talkie field with the first Fearless Dramophone Recorder. Designed and built by Mr. Ralph Fear, the equipment is now available.



Sound or silent motion pictures made to order anywhere—any place—any time—using the finest modern equipment

Complete Laboratory Service — Sound Printing — Preview Room Equipped for Sound—Cutting Machine with Sound —Automatic Developing Machine to be installed soon.

All kinds of Lighting Equipment — 24-inch Sun-spots — 70-Amp. Spots — 150-Amp. Rotary Side Arcs—300 Amp. Motor Generator and The most complete stock of Incandescent Lights in Northern California.

Advertising and Industrial films Made to Order *(Sound or Silent, Color or Black and White)*. Now making Trailers for Fox West Coast, Publix, R-K-O, T & D Jr., Golden State and Other Circuits.

ADVERTISING FILMS PLACED IN 200 THEATRES

Commercial Film Laboratories

10 Years of Making Commercial Motion Pictures

3664 Broadway **Phone Piedmont 3523**

Oakland, California

WHEN IN NORTHERN CALIFORNIA VISIT OUR PLANT

Fearless

Silent Super-Film Camera

A NEW UNIVERSAL camera for modern conditions. Scientifically designed to meet the requirements of the modern cinematographer. This new camera is the only one which can be used for BOTH the new wide film and standard film. It is designed to fill all the needs of the profession today as well as the future, including pictures in natural color. This camera is presented as the last word in design, construction, workmanship and materials.

Deliveries filled in rotation. Our production plans call for one camera per week.

Fearless Camera Company

7160 SANTA MONICA BOULEVARD

Hollywood, California

Telephone
GRanite 7111

Cable Address
"Fearcamco"



Still by Freulich

LAURA LA PLANTE and JOHN BOLES
in
"CAPTAIN OF THE GUARD"

Gilbert Warrenton, A.S.C., Cameraman : Jack Pierce, Sam Kaufman } Make-up Artists

A UNIVERSAL PRODUCTION

Max Factor's Make-up
USED EXCLUSIVELY

MAX FACTOR MAKE-UP STUDIOS
Highland Avenue at Hollywood Boulevard
HOLLYWOOD, CALIFORNIA

Tel. HO-6191 Cable Address "Facto"

Max Factor's Panchromatic and Technicolor Make-up for the Screen

Chicago Office 444 West Grand Ave.

Other Foreign Branches

4C Her Majesty's Arcade, Sydney, Australia
67 Foochow Road, Shanghai, China
399 West Street, Durban, So. Africa
Benson, Smith & Co., Honolulu, T. H.
249 McCall St., Toronto, Canada

London Office 10 D'Arblay Street

Max Factor's Theatrical Make-up for the Stage



A Scene from "Let's Go Native," a Paramount Production with Jack Oakie, Jeanette MacDonald and James Hall.

putting her best foot forward

HERE SHE IS! You've seen her a thousand times on the screen. Her demure little smile is warm and friendly. The pert smoothness of her nose . . . the depth and luster of her sparkling eyes, are bewitching. Light from National Photographic Carbons emphasizes her piquant charm. National Panchromatic Carbons (soft-arc) mold her face in close-ups. The soft orange light struck from these carbons is rich in red, orange and yellow-green rays. It brings out the youthful colors, the smoothness of the forehead and neck. And for longer shots, National White Flame Photographic Carbons (hard-arc) have the actinic carrying power necessary for successful photography. Every graceful gesture is registered, is made an exciting pattern of light and shadow. Give your stars every chance to "get over." National Photographic Carbons, White Flame and Panchromatic, help them put their best foot over.

NATIONAL CARBON COMPANY, INC.
Carbon Sales Division, Cleveland, Ohio
Unit of Union Carbide UCC *and Carbon Corporation*

Branch Sales Offices: New York, N. Y. Pittsburgh, Pa. Chicago, Ill. Birmingham, Ala. San Francisco, Calif.

National Photographic Carbons

White Flame and Panchromatic



Photo by Elmer G. Dyer, *A. S.C.*

CRANKING FOR UNCLE SAM

Even Grasshoppers are Temperamental When a Camera Looks Their Way.

By Raymond Evans

U. S. Department of Agriculture.
Chief, Office of Motion Pictures.

ONE might fancy that the life of the cameraman working for Uncle Sam in the Department of Agriculture is prosaic and monotonous, not to say bovine, as compared with the eventful and sometimes hectic life of the cameraman of Hollywood. As to whether that life is prosaic is a matter of personal taste—there is no arguing with the man who would rather get a closeup of a corn borer parasite stabbing his victim than one of Corinne Griffith or Greta Garbo—but no one can successfully maintain that the life of the Department cameraman is monotonous. The subject matter of our pictures ranges from milch cows to microbes and from dusting cotton with airplanes to the travels of a banded duck. Whatever may be said of our work, it never runs in a groove. No two jobs that we undertake are ever near enough alike to make the second one uninteresting, and many of them raise problems that we have never had to face before. If variety is the spice of the cameraman's life, then the life of the Department of Agriculture cameraman is all shot through with paprika.



The Author in his Laboratory at Washington, D. C.

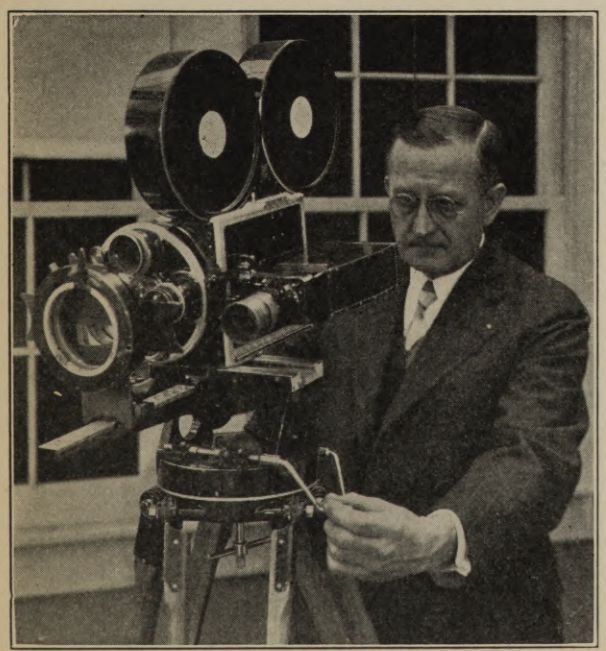
Sometimes, too, the length to which our boys must go in solving specific problems in cinematography are not only highly interesting, but, to the bystander, more or less amusing. The director, who, in many instances, becomes merely a bystander while the cameraman wrestles, or perhaps grovels, in a catch-as-catch-can battle with some knotty problem in scientific cinematography, doubtless sees more humor in these struggles than do the boys themselves. Take, for example, Eugene Tucker's heroic, and (eventually) highly successful efforts to get a close-up of a lady grasshopper ovapositing. (A grasshopper, you must understand, entomologically speaking, does not "lay" like a hen.)

We had scoured a large part of the exceptionally large and open-faced state of Montana, and down into the northern part of Wyoming, looking for grasshoppers ovapositing, and finally at Cody, through the county agricultural agent, we learned that grasshoppers were "laying" on Irma Flat We hastened to Irma Flat. The grasshoppers were "laying" all right—millions of them, but I was rather at a loss as to what to do about it. A Grasshopper ovapositing, from the lowest position obtainable with a tripod, is foreshortened till she is nothing but two eyes and a pair of knees.

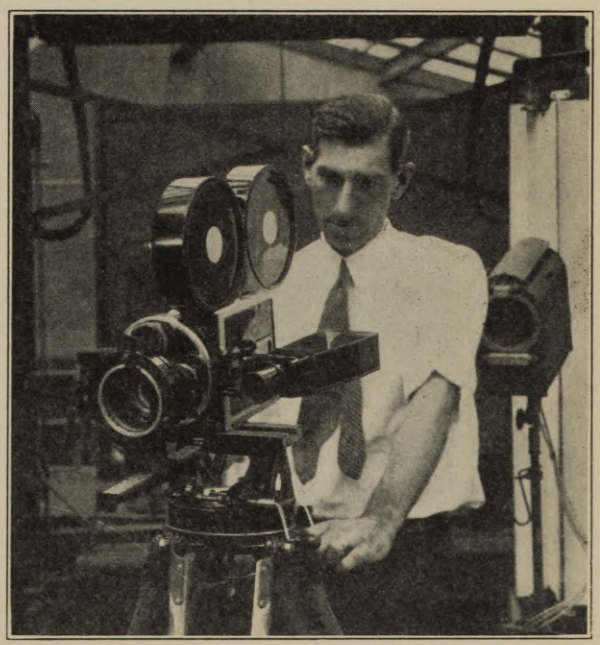
The jocular expression "knee high to a grasshopper" has always been accepted as a hyperbole. Even in my earliest boyhood I never really believed that anyone could get down that low. But I saw Tuck do it, and the memory of the spectacle will always be precious to me.

Figure to yourself a lanky North Carolinean, rather better than six feet in height, kneeling on the sun-baked soil of a ditch bank, with his cheek ground into the earth in an earnest effort to screw his eye up to the aperture of a dismounted Bell & Howell. Imagine, too, an equally earnest female grasshopper,

(Continued on Page 26)



Geo. R. Goergens, Chief Cinematographer, Department of Agriculture, Washington, D. C.



Eugene Tucker, Cinematographer, U. S. Department of Agriculture, Washington, D. C.

SOUND REPRODUCTION IMPROVING

Survey of Theatres Shows 84 Per Cent Giving Their Patrons "Good" Reproduction

By WALTER F. EBERHARDT

SPEAKING from observations based upon frequent trips of inspection to Western Electric equipped houses in every part of the country, H. M. Wilcox, Operating Manager of Electrical Research Products, recently made the statement that sound reproduction in 84 percent of the theatres he visited was now "Good".

He declared this to be a distinct improvement. Up until the end of 1929 only 80 percent of these reports showed theatre reproduction "Good" while as recently as the middle of last summer reproduction was satisfactory in less than 75 percent of the houses.

The changed conditions Mr. Wilcox ascribes to constant supervision and increased interest and attention on the part of theatre managers and operators. Such steadily growing improvement in the quality of theatre reproduction is the best possible guarantee of the future prosperity and popularity of talking pictures. Not merely the entertainment, but the standard of quality that accompanies its presentation, is a determining factor in whether patrons will continue to pay for talking picture entertainment—not merely because of the novelty that attracted them in the first place—but because of sheer superiority against the competition of other forms of entertainment.

To maintain this superiority it is recognized that other factors than the customary ones of star, story, direction or camera work enter into the result. The recognition came slowly. Eventually a comparison of receipts between wired and unwired houses, and between houses where there was good reproduction and those where the reproduction was inadequate brought home the realization that there was a definite relation between the box office and between the quality of recording and reproduction.

Those who made a conscientious study of the new art of talking picture before they became a commercial reality, realized that they could endure not as a novelty but only if they provided quality of entertainment. As a result one may point out some of the precautions taken by the Western Electric Company and Electrical Research Products in trying to assure the highest quality of recording and reproduction at all times.

Behind this sound system are the Bell Telephone Laboratories, the largest laboratories in the world devoted to voice transmission, constantly experimenting and developing improvements. These laboratories have an appropriation in excess of a million dollars every year to be devoted exclusively to sound picture development. More than 753 service men on the staff of Electrical Research Products, make regular inspection of the equipment in the Western Electric wired houses. In one month they may cover more than 400,000 miles. They are ready, at any time and on a moment's notice to respond to a theatre's emergency call by motor, rail or airplane. The important point of their work, however, is that it is mostly precautionary. They operate on the principle that the best way to cure trouble is to forestall it. More than 93 percent of their calls are routine calls. Less than 7 percent are necessitated by any kind of trouble.

The result of constant supervision and intelligent handling by theatre operators shows. Out of more than 90,000 performances given weekly over this kind of equipment in the theatres of the United States, less than one-tenth of one percent of program interruptions occurred. And of this small percentage only a fraction involved any serious breakdown.

The policy of forestalling trouble was carried even beyond supervision. Questions of architecture, construction and the acoustics involved were studied on the belief that the best way to avoid bad reproduction was—wherever possible—to forestall the conditions, outside of equipment, that might be responsible for it. For the first time recognition was given to the fact that acoustics in the theatre might have a bearing upon the quality of reproduction. Electrical Research Products established a department under S. K. Wolf to study theatre acoustics. It worked for six months without a word of publicity until it had something constructive to offer.

During that time it not only made a study of the acoustics of more than 500 theatres but also established its own laboratory in a theatre in Brooklyn where it could experiment. As a result of those studies this department is now able to offer definite suggestions to theatre owners who have wired or are planning to wire houses. It can co-operate from the very beginning. It can consult with the architect in suggesting theatre designs that best lend themselves to good reproduction. It can place its data at the services of the contractor as to the kind of material for theatre construction best adapted to good acoustics. It can offer suggestions to the exhibitor as to the best furnishings with regard to acoustic qualities.

This department has accumulated files of every kind of theatre building and furnishing material. It has absolutely no affiliations with any company supplying such materials, consequently its advice is tempered only by the exhibitors' best interests. And it offers this advice whenever it is called upon not only for new theatres but also for existing houses that were built long before the question of talking pictures or acoustics meant anything. It suggests as far as possible, changes that will improve reproducing conditions in the house. The calls are growing upon this department and indicate a healthy interest on the part of theatre owners in good reproduction and a realization of what it means to the theatre's financial condition.

The three factors—equipment resources, supervision and acoustic advice—are an indication of the trend. They indicate an interest that assures the lasting future of the talking picture.

Eastman Opens Special Plant For Hypersensitizing Work

A NEW Hollywood laboratory, especially equipped for hypersensitizing motion picture film has been completed by the Eastman Kodak Co. The new plant is directly in the rear of the Eastman Research Laboratory at 6706 Santa Monica Boulevard.

This plant was built for the hypersensitizing of negative in connection with color process. Officials of the organization do not generally recommend the hypersensitizing of film for ordinary black and white photography, but explain that it can be used advantageously for special effects, such as moonlight, night scenes, etc.

In this same new plant the processing of the 16 mm. film and the Kodacolor processing for Southern California will be handled.

Form New York S. M. P. E.

A NEW YORK Section of the Society of Motion Picture Engineers was formed at a recent meeting of more than 150 Eastern members of the society.

At the meeting the following officers were elected: M. W. Palmer, Chairman; T. E. Shea and M. C. Batsel, Managers, and D. Hyndman, Secretary-Treasurer.

The geographical boundaries of the New York Section were defined by the Board of Governors as an area enclosed within a circle having a radius of 50 miles from Times Square.

With the formation of the New York Section, it will be possible for the Eastern Members to become better acquainted with each other and the work of the society. At the organization meeting Dr. Walter Pitkin of the School of Journalism, Columbia University, delivered an address on "The Psychology of the Sound Picture", drawing attention to the many shortcomings of the present methods of sound reproduction, particularly with respect to the reproduction of noises. President J. I. Crabtree acted as temporary chairman of the meeting.

LICHT, ACHTUNG, KURBEL—HALT!

Motion Picture Production in Germany

By A. K. Wittmer

A SET in a studio. Five retakes. Directors up in the air. The last shot excellent, everything lovely—but—on the floor lies a beautiful splash of morning sunlight—but, none enters at the windows. Someone forgot to turn on the sun. But from where does the sunlight on the floor come? From a paint pot! So the sun goes on, and so does the picture. Such things can happen in German studios.

The largest and best known of the German studios are the "Ufa" in Tempelhof, the "Jofa" having studios in a zeppelin hangar at Staaken, both near Berlin, and the E.F.A. in the heart of the city. To these we must add two sound film studios. The "Tobis" in Lankwitz, and the "Bolten Backers Studios," Berlin. Last summer the new "Ufa" sound studio was in construction and is finished by now. It is one of the most complete studios for sound production.

The layout of the German studios is very simple, but practical. Several large buildings side by side, holding two or three sets each, or one building with space enough for six or seven sets are the most common. The studio buildings are really large dark rooms. No windows of any kind are provided, and all daylight is excluded. The studios are well ventilated by large light-proof airshafts. Doors on one side allow heavy trucks to enter and reach almost any place in the studio. The offices, dressing rooms, store rooms, and recreation rooms are built around the studio. Small compartments in remote corners inside the studios are fitted up as darkrooms for the cameramen. These darkrooms are generally devoid of air, and have unsafe safe-lights that give no light.

Overhead lights are handled from a grid under the roof and, by this arrangement, it is possible to illuminate every corner in the studio. Large parallels are built around the sets to carry the spotlights and modeling lights. These parallels cause much grief in changing the set for special effects.

Building materials for the sets are mostly laminated wood, canvas, paper, and plaster of paris. To cut down expense in building, most of the sets are rebuilt, and only additional parts added as required by the script. After use, the old sets, O.K.'d by the production manager, are numbered, dismantled, and kept in the "jundusraum" for future use. The jundusraum is a sort of glory hole, in which is nearly everything needed in building or reconstructing sets. Flats, parallels, stairs of all sizes are available. Doors and windows, futuristic to early Roman are always in stock. Pillars and fireplaces of press-board can be used in new sets on short notice, with the aid of plaster and the air-brush. Old sets go through a mechanical metamorphosis, and emerge, butterfly-like, as new creations.

According to German producers, this jundusraum saves the industry a tremendous sum. A set of similar dimensions and character, built in the States, will be six to eight times more expensive than one so constructed in Germany.

Let us see how a set is built. The director, having read the script, makes a rough outline of the set required for a certain scene. Sketches and blue-prints are made by the designer and, after approval by the director, are sent to the head carpenter. He goes over the stock in the jundusraum and considers what existing sets, doors, windows, and props can be redesigned for this purpose, with minimum cost. This material is brought over to the stage. A plan of the set is marked with chalk on the floor. The flats are joined together on the floor and openings are left for doors and windows. The flats are held on the frames with C clamps and stiffened with cross bars. The whole wall is then erected and braced. The doors, windows, fireplaces and stairways are then built in. While this is going on, new equipment which is necessary is being built in the work shops and is ready when needed.

At this stage the set is ready for the paper hanger. The walls are covered with canvas cloth, then with wall paper, which is mostly of a light oatmeal color. The floor is then laid, and the set is ready for the decorator and property man. The set is furnished, and some lighting effects painted on the floor with the air brush. These effects are somewhat unconvincing when called on to show additional shadows.

Big parallels and bridges, by this time, are built behind the set for the modeling lights. The cameraman and director cuss and discuss the lighting and camera effects. Cameramen are the same the world over. Then the lights are hauled up to the bridge, causing scratches on the wall and friction with the paper hanger.

Most of the studios are very well equipped with lights, and they all work. For general illumination arc lights are used throughout the studios. Only lately incandescents have come into use, with the advent of sound work. A wide choice in arc lights is open to the cameraman and he prefers them to incandescents. Broadsides, having two to twenty-two flames, are used for floor lamps, employing white flame carbons for the most part. These lights are strongly built, but at the same time have great flexibility and can be easily shifted to any position.

Arcs up to 170 amperes are used for overhead lights. These lamps are easy to handle from the grid, and give a very intense light. A special construction secures steady burning, and so eliminates flickering shadows. Twenty-five ampere lights are in general use for overhead lights. The outstanding make for this purpose is the Jupiter Goliath light, which can be operated with one pair of carbons without retrimming for seven and a half hours.

Spotlights are not so much used on the sets, but each studio has a variety at hand. For modeling, the sun arc is most in demand. These are large lights with a mirror reflector, for producing an intense beam of about 15 degrees in angle. The illumination is practically the same as that from a spotlight. The diameter of these lights is from twenty-five to one hundred cm., and the current ranges from thirty to three hundred amperes.

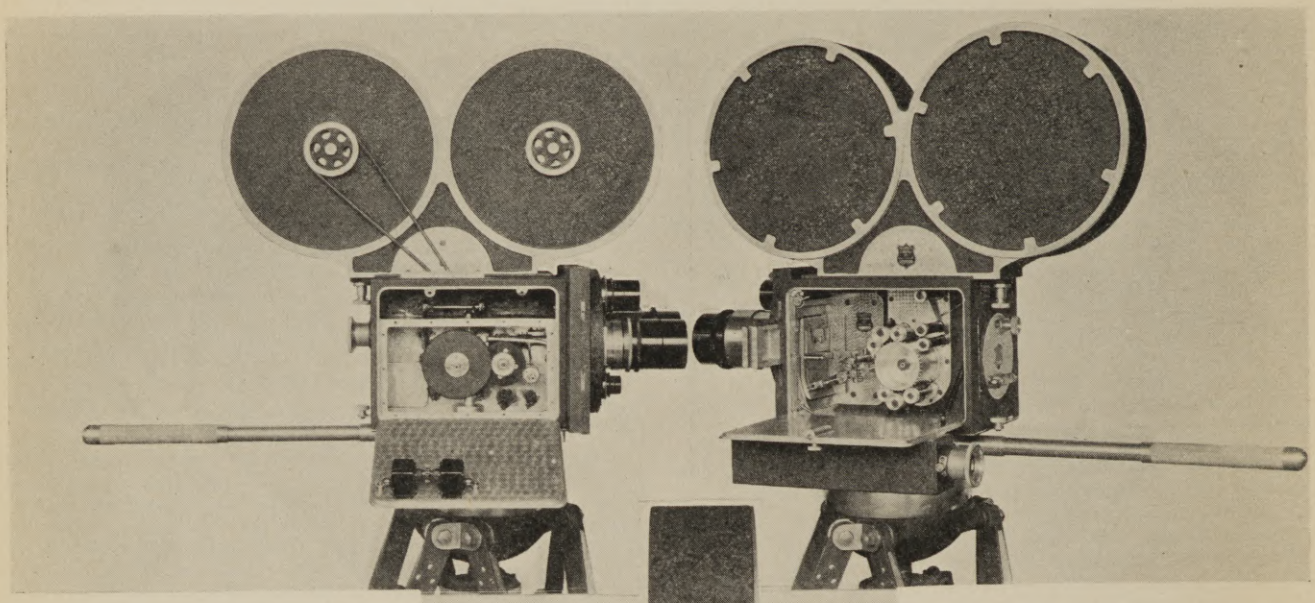
In sound studios, incandescent light is used exclusively, and many types are now on the German market. The Jupiter, Efa, Weinert, and Agelindus works are improving their equipment steadily. Everything from broadside up to the largest sun effect can be had from incandescent lamps. Broadsides are made from two to thirty 500 watt lamps. A new lamp is made by Jupiter having four reflectors which form a square with an opening in the center. By this means the cameraman is enabled to photograph a close-up through the square. The same company puts out a spotlight with a special optical system. A spot free of any shadow is produced with this outfit. A mirror is used to intensify the beam, and the lamp socket can be adjusted in all directions. It is likely that the optical system is of the condenser and relay lens type. As a light source a 1500-3000 watt projection lamp is used.

A combination of Cooper Hewitts and incandescents is manufactured by the Westinghouse Cooper Hewitt G.M.B.H. (Germany). On two reflectors eight bulbs are mounted, and between them are mercury tubes. Each unit is controlled by a separate switch, hence the light quality can be varied greatly by turning off the undesired units.

Cameras used in production are mostly of the Debrie type. Only a few American cameras are on the sets. The "Askania", a German made camera, is generally favored by the cameraman. The housing of this camera is made of duraluminum, with roller bearings throughout the mechanism. A 160 degree shutter is used, which has both automatic and hand dissolve. There is a roller pressure gate, with an opening for focussing. An optical finder giving six to eight times magnification is built in, by means of which the image on the film can be viewed during exposure.

A lens turret for four quickly interchangeable lenses is supplied as an extra. Each cameraman has a collection of about four to six lenses. 35 to 100 mm. in focal length. For general work the 50 mm. lens is preferred. The f 3.5 Zeiss and Goertz lenses are representatives. For close-ups the 75 and 100 mm. lenses diffused with a disc (Eastman) or gauze, are used. The cameramen seldom has a soft focus or portrait lens. The reason for this is the near-poverty prevailing among cameramen. Many cameramen produce excellent results with only two lenses.

(Continued on Page 39)



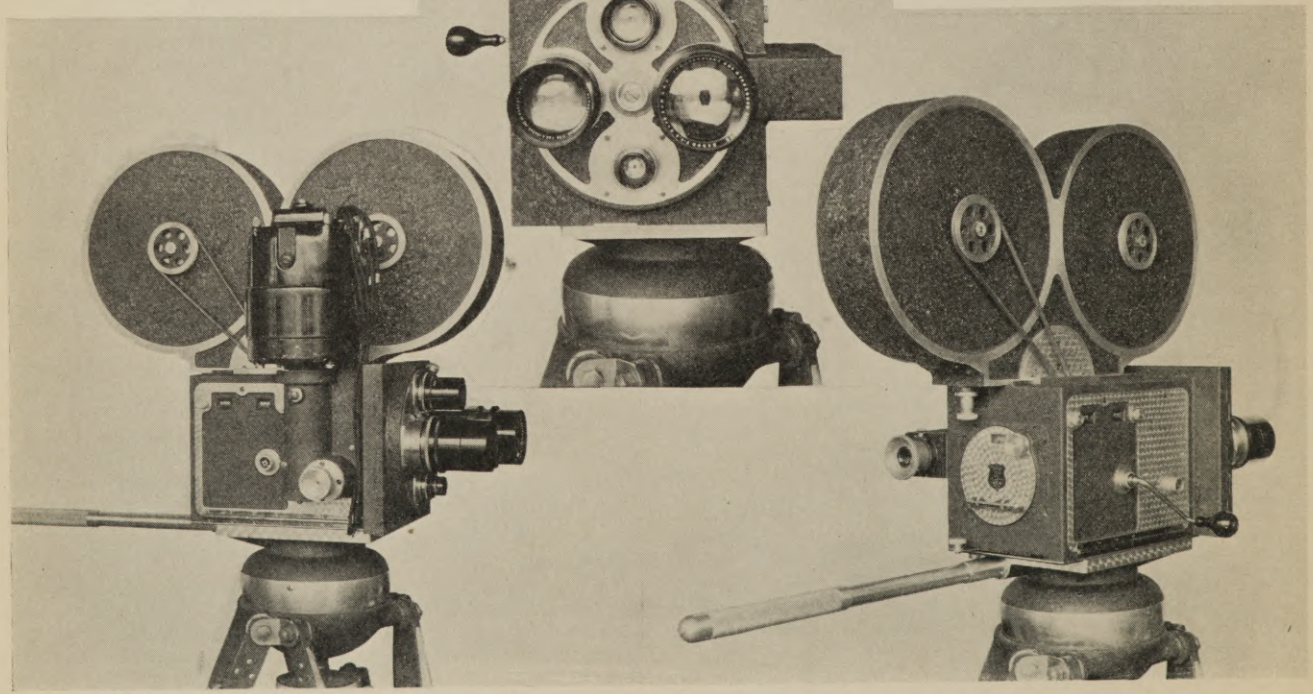
Above: Box plate removed showing mechanisms in oil-tight and sound-proof compartment.

Above: Sprocket and roller assembly of Camera and fearless Silent Movement adjusted for 65 mm. film.

Center: Front view ready to shoot. Turret and lens mounts.

Below: Rear and right side view of camera.

Below: New Fearless 65 mm. camera equipped with motor.



FEARLESS CAMERA COMPANY PRESENTS SILENT SUPER-FILM CAMERA

New Camera Designed for 65 Millimeter or 35 Millimeter Standard Film. Also for Color.

By HAL HALL

ONE OF the outstanding events in Hollywood technical circles in a year of revolutionary innovations is the completion by the Fearless Camera Company of a new silent, high-speed camera designed for 65 millimeter film, but which, in ten to twenty minutes times may be turned into a standard 35 millimeter camera.

The presentation of this camera to the trade marks still another change in film width conditions. For months the air has been filled with talk of wide film. No standard width has been settled upon, and the Society of Motion Picture Engineers has been struggling with the problem, as well as many producing organizations. Then came Fox with its Grandeur, 70 millimeters, revealing stereoscopic depth.

Undoubtedly, there is to be a change in film width. Wider film is here to stay, if all indications mean anything. All producers are and have been eagerly watching the various developments along this line. While wide film is apparently to be the rule eventually, the producers realize that such a change will take time, and that 35 millimeter pictures must continue in the meanwhile.

This condition has placed producers and cameramen in a peculiar situation. If new camera equipment is purchased of standard 35 millimeter size, the cameraman or producer wonders just how long this will be of use. On the other hand, the purchase of a wide film camera is a move which calls for serious consideration and hesitancy.

Now Ralph Gordon Fear, president of the Fearless Camera Company, believes he has solved at least part of the problem by producing a camera that can be used to shoot on either 65 millimeter or standard 35 millimeter film. In selecting 65 millimeters as the width for the "wide film", Fear declares this to be the ideal width.

Other outstanding features of his new camera, claimed by Fear, include arrangements whereby the camera may be changed by the changing of movements and sprocket assemblies so it can be used for either 62 or 70 millimeter film. Also the camera is designed to be used without any sound proof covering or booth, and, according to Fear, is designed for use in using the Multicolor process of producing pictures in natural colors.

Fear, who is well known in the motion picture technical circles, has been engaged in technical work for the past ten years, and has followed the problems of sound and wide film closely with the idea of bringing out a camera that would be both silent and readily convertible for use in photographing on any sized film.

In his own words he describes the new camera and its features as follows:

"The new camera is built, first, to be silent so that it can be used in the open without any sound proof covering for all ordinary shots; second, to use the new 65 mm. super-film; third, so that it can be readily converted to the special 62 and 70 mm. film which some of the producers are experimenting with; fourth, for taking colored pictures in the camera without any alteration; fifth, for recording sound directly in the camera if so desired, and lastly and most important, 35 mm. film can be used in it also.

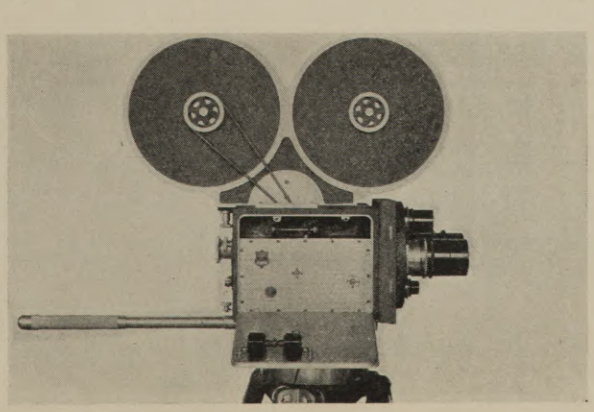
"As two large film manufacturers are now in a position to furnish the 65 mm. super-film to the producer, the difficulty of obtaining film has been eliminated, and for this reason the 65 mm. standard has been adapted for the new camera.

"From the cameraman's point of view the most interesting feature of the Fearless camera is the feature of being able to use the camera for either 35 mm. or wide film. The camera is normally built for the standard 65 mm. super-film. A special movement for 35 mm. film has been developed, and this movement is interchangeable with the 65 mm. movement. Two interchangable sprocket and roller assemblies have been developed. One is for 65 mm. super-film and the other for 35 mm. film. So by merely removing one movement and sprocket assembly and substituting the other, the camera can be used for either size film. This feature applies to any other size film as special movements and sprocket assemblies can be furnished for any size film up to 70 mm. The change over from one size film to the other can be made in less than ten minutes.

"When the Fearless camera is purchased for 65 mm. super-film or for special size wide film, the accompanying magazines are designed so that 35 mm. film can also be used in them. This is accomplished by providing the film rollers with a relief so that the 35 mm. film is properly guided into the magazine and by furnishing special take-up spools for the narrow film. These spools hold the film central in the magazine and prevent it from creeping to one side or the other. In fact they practically act as a film reel.

"Standard 35 mm. magazines can also be used on the camera when using 35 mm. film; thus making it possible to use some of the equipment that the producer now has. This is accomplished by making a special adapter which fastens on top of the camera. This adapter partially covers the hole for the large size film and excludes all light from the inside of the camera when using the 35 mm. magazines. With the adapter in place, standard 35 mm. magazines can be used.

"Inasmuch as this feature of interchangeability is one of the biggest features of the Fearless camera, extreme pains have been taken to secure patent protection on this feature, and thus prevent infringement. Separate patent applications have been made on the construction of the magazine with the relieved rollers for



Right side of new camera showing oil tank and footage meter.

handling 35 mm. film, on the adapter for attaching 35 mm. standard magazines to a wide film camera, on a narrow magazine with a wide base attached to a wide film camera, and on a movement adapter for properly locating a movement designed for a narrow film camera in a wide film camera. These patent applications preclude the possibility of any other manufacturer building a similar camera in which both wide film and 35 mm. standard film can be used.

"Other features furnished as standard equipment in the new Fearless camera include a quick focusing device; full force feed lubrication to all major driven parts, all driving parts being inclosed, and running in an oil bath; and two built-in footage counters. As special equipment the camera can be furnished with a built-in speedometer, a built-in three-speed high-speed gear box and a built-in sound recording mechanism.

"To elaborate on the method of focusing the photographic lens—The camera is built with a sliding turret and lens carrier on the front of the camera box. This lens carrier is mounted in dove tails and constructed so that it may be shifted across the front of the camera box to a point where the photographic lens is in front of the ground glass of the focusing tube. The lens carrier is made so that the light shade is mounted to it and instead of having to shift the camera, magazine, motors, cables, etc., only the light weight lens system and light box is shifted.

"The actual shifting is accomplished by merely pressing down a knob and moving a lever from one side of the camera to the other. This focusing operation is performed so quickly that it has been a revelation to all who have seen it. Suitable stops prevent over-travel and suitable locks are provided to hold the lens carrier either in the focusing position or in the photographic position. The image is viewed with a conventional finder or focusing magnifier which is supplied for either five or ten power. The focusing telescope is of the simple astronomical type, and re-inverts the inverted image formed by the lens on the ground glass, thus bringing the viewed image right side up and right side to.

"The Fearless camera can be furnished with built-in auxiliary recording aperture at the proper distance from the photographic aperture and sprocket for recording sound directly in the camera. The auxiliary sprocket for pulling the film past the sound recording aperture is driven by a mechanism designed to absorb vibration so that the sound recorded is free from the so-called wow-wows caused by irregularity of film speed by the sound aperture. This feature of built-in sound recording makes it possible for the producer to make sound pictures at once without having to wait for new recording apparatus for the new size film. The design is adaptable to almost any type of light valve or glow lamp type of recording.

"A standard Fearless Silent movement of enlarged size is used to feed the film intermittantly past the aperture. Two claw pins are used on each side of the film to pull the film down and pilot pins are used to lock the film during the exposure. This movement is extremely easy to thread and due to simplicity of design and accuracy of workmanship is so silent that only by placing the ear against the frame of the movement can any sound be heard while in operation.

"The camera has been designed for silence and extreme pains have been taken in the design and construction to eliminate noise where ever possible. The camera can be used in the open for all ordinary shots without any sound proof covering. This has been accomplished by using fibre gears to transmit the power, precision bearing for the driving shafts, and by inclosing all moving mechanism outside of the movement and sprocket assembly in an oil tight and sound proof compartment which serves as an oil reservoir. An oil pump within this compartment pumps oil to all bearings and moving parts therein. This circulating oil deadens any noise developed by the mechanism. The oil level may be viewed through a window built into a plate that covers the mechanism compartment. Sufficient oil is placed into the compartment to last for several months. All high grade automobiles use pressure feed lubrication but this is the first time it has ever been applied to a motion picture camera.

"The motor drives directly into an extension of the movement cam shaft, and thus transmits the motor power directly to the most highly stressed part of the camera and eliminates a great deal of noise caused from gears. The motor itself absorbs any vibration caused by the intermittant movement.

"Silent bakelite gears are used to drive the sprockets and shutter shaft. A large heavy shutter of the two opening type running at a speed one-half of the intermittant mechanism is used for a fly wheel. This heavy revolving shutter also absorbs any noise that might be transmitted to the front of the camera. Where ever possible instrument type precision anular ball bearings have been used to reduce friction and to insure long life to the camera. Two footage counters of the Veeder type are built into the camera, one being used for total footage shot and the other being used for individual takes.

"Provision is made for attaching to a standard Fearless tripod. The tripod being equipped with a stud which can be turned by suitable gears and which engages with a bronze nut inserted in the camera case. The camera crank is used to actually deliver power to the stud to screw the camera to the tripod.

"It is impossible" says Fear, "to adequately describe this camera, but some idea of the thought placed in its design can be gained by reading over the list of features, on all of which patents have been applied for to prevent infringement. Following is a list of patents which have been either applied for or granted:

1. Quick shift with lever action.
2. Quick shift with gear and twisting handles.
3. Automatic Dissolve.
4. Built-in three speed gear box for Hi-speed work.
5. Built-in automatic belt tightener (two applications).
6. Built-in motor circuit breaker.
7. Built-in force feed lubrication system with pump.
8. Adapter for adapting 35 mm. film movements to wide film cameras.
9. Dual Sprocket for 35 mm. film and wide film.
10. Magazine adapter for using standard 35 mm. film magazines on wide film cameras.
11. Automatic trip for motor control.
12. Non-reversible drive for camera or motor.
13. High speed silent movement.
14. High speed 35 mm. silent movement with extra wide aperture plate for fitting wide film cameras.
15. Film sound recording aperture and auxiliary sprocket drive.
16. Quick threading pin for locating film properly in movement.
17. Removable prism for focusing directly on the film through the intermittant movement for precision work."

The new Fearless Magazine is being announced along with the new Fearless Super-Film Camera. "More than eighteen months time was spent in experimenting, research, and patent investigation", says Fear, "before we had developed a magazine that we felt would be superior to any now on the market.

"A camera magazine at first thought," continues Fear, "appears to present no problems, but with a little thought any cameraman will realize that thousands of feet of film have been spoiled by the magazine. Scratches are one of their worst faults. Practically all buckles in a camera are caused by improperly constructed magazines. Most magazines are extremely hard to thread, and it is almost impossible to keep them clean; and in every case it takes a great amount of labor to dismantle the magazine to remove rollers, light trap, etc. and all magazines now on the market are somewhat noisy.

"Realizing all the above defects, the Fearless Camera Company have brought out a new type magazine which eradicates these troubles. The new magazines were designed primarily for silence, serviceability, durability, and reliability, and are extremely easy to load.

"The main magazine casting carries the take-up rollers and spools. This assembly is carried on imported instrument type anular ball bearings. The spool will turn thirty to forty revolutions, even when loaded with a thousand feet of film if it is twisted quickly by hand. In fact the film moves so freely that one hardly believes there is film in the magazine.

"Film is fed from the carrier spool thru a free opening light trap which is clearly illustrated in the accompanying photographs. The light is trapped by two rollers which are also mounted on precision instrument type ball bearings, and by a velvet lining in the throat of the magazine. The rollers are made from Duralumin and the roller shafts from steel. As will be noticed from the photographs, the light trap is removable from the magazine. Six screws in the bottom of the magazine hold it in place in the main casting. These may be removed in a few seconds time and the entire light trap removed. The light trap assembly can be quickly taken apart by removing four screws from the side of the casting. In fact the light trap can be removed, completely dismantled, cleaned, and re-assembled in less than ten minutes time.

(Continued on Page 44)

SOUND PERSONNEL AND ORGANIZATION

A Sound Engineer Explains the Man-Power Necessary for Sound Picture Making

By Carl Dreher

This interesting paper is reprinted from the Technical Digest of the Academy of Motion Picture Arts and Sciences. Mr. Dreher is director of the Sound Department, R-K-O Studios.—THE EDITOR.

WITH the advent of sound in the motion picture industry, some peculiar problems of employment and organization arose. An intricate and highly evolved business had to assimilate, in the space of a year or two, a large body of technicians from another field, train them in its methods, and in turn modify its own technique to meet new and exacting requirements. The speed with which the amalgamation was accomplished speaks well for the adaptability of both the film group and the majority of the newcomers. The problems which arose, overshadowed at the time by questions of major technical and economic importance, are still of sufficient interest to justify some consideration in the present course, especially as their complete solution lies in the future.

Since the moving picture background is familiar to most readers of this paper, it is unnecessary to discuss it here. The history of sound recording and reproduction is in many respects analogous, with the addition of an important factor: the electrical technique based largely on the vacuum tube and its associated circuits. The early phonograph art resembled motion pictures in the fusion of esthetic and mechanical elements. In each case the artist has to reach the public through a machine. Early attempts to combine the two processes failed, largely because the sound reproducing elements were still too imperfect. In the meantime the radio art had started on its development. For a time, during the first two decades of the century, radio was purely a business of telegraph signalling without wires. The potentialities of the vacuum tube as an amplifier and generator of currents of almost any frequency promoted the spread of radio technique into the wire telephone art, the phonograph industry, and the amusement business.

These developments have a bearing on the sources of sound picture personnel. Many of the sound technicians now in the picture business began their careers as wireless operators or engineers. The early history of radio showed the usual characteristics of instability and financial turbulence of any new industry. The men who chose it for a career were, as a consequence, young, adventurous, and more adaptable than the average. When broadcasting became an adolescent member of the family of radio industries, a certain percentage of these men chose the path away from electrical communication into a business with theatrical elements and immediate contact with the amusement-seeking public. In the meantime technicians from the radio and telephone industries, finding positions in phonograph recording organizations when that field turned to electrical methods, likewise became available for work in sound pictures. As a third major source of supply, the laboratories of the electrical and telephone companies produced their quota of engineers who were more or less fitted for the special requirements of sound picture production. In addition to these groups, there were men already in the picture field who had qualifications for sound work.

Importing Personnel

This brings up the first of a number of arguable points. In the building up of an effective sound department, to what extent was it advisable to go outside of the motion picture industry for personnel? Had the adoption of sound been a gradual process, it might have been necessary to import personnel to the extent of only a half, say, of the total number of people required. Because competitive conditions, and the inherent nature of the business, required an extremely rapid consolidation, it is estimated that eighty per cent of the sound men were taken from the outside. The majority of sound executives in Hollywood appear to feel that this ratio is somewhat high, and that the best results at the present juncture may be secured by mixing about two thirds of what may be loosely called radio personnel with one third film personnel. There are, however, extreme views on either side of this compromise. One prominent sound head expressed the opinion that the personnel of the department should be secured entirely from outside sources, such as engineering schools; telephone, radio, and electrical laboratories; broadcasting stations; radio receiver factories; public address installations; phonograph recording studios, etc. Another executive recruited his entire sound personnel from the employees already on the lot, training them with the aid of engineers provided by the licensor of the recording equipment. He concedes that this course involved considerable delay in getting the department under way, but believes there will be compensations later. Since both of these companies are successfully producing sound pictures, the conclusion apparently is that a sound department, like most other enterprises, may be run on different theories, as long as there is some internal consistency in the carrying out of whatever scheme is selected, and certain general prerequisites of organization are not neglected.

We may now consider in some detail the organization of a sound department and the functions of the various employees, shown in more or less typical schematic arrangements of Fig. 1. This is intended to apply to a lot which confines itself to recording on film, using mobile equipment which may be moved *physically* from one stage to another, so that all the apparatus is on or near the stage or location. This is in contradistinction to the system whereby the main amplifiers and the recording machines are centrally located and connected electrically to various pick-up points, movement from stage to stage, where required, being accomplished *electrically*. (See Fig 2). Both systems are in extensive use and each presents certain advantages, but the

(Continued on Page 18)

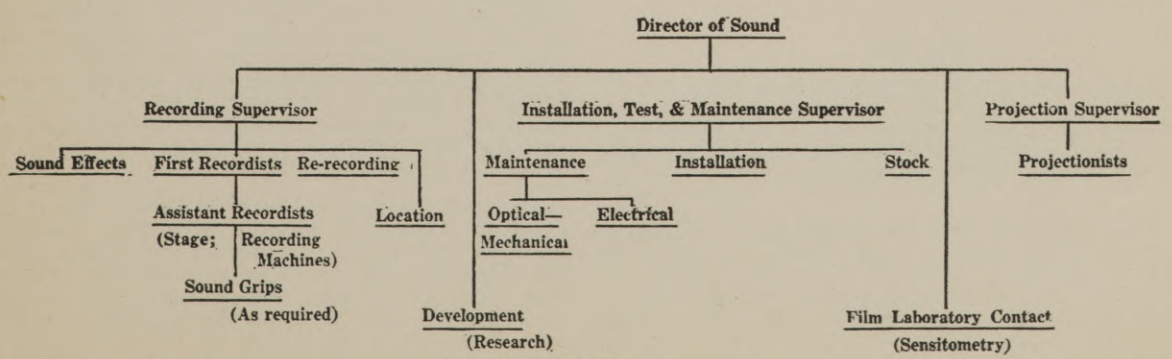


FIGURE 1

Studio using portable equipment; Film Recording only.



Our Contemporaries

LIKE a fireman who spends his day off at the fire station, this writer spends much of his spare time reading the other cinematographic and photographic magazines; and, if you will pardon the personal pronoun, I get a tremendous amount of genuine pleasure, to say nothing of instruction, from said reading.

So, you may well imagine the added pleasure that came my way when I picked up the March issue of *The Camera* and found a reprint from the *American Cinematographer* of William Stull's article on Multicolor therein. But the most pleasure came from the sincere and genuine manner in which the editor of *The Camera* spoke of the *American Cinematographer* and Mr. Stull. There are so many editors and publishers who seem to feel that to say something nice about another publication is next door to treason. It is refreshing and stimulating to find those who believe there is room for another publication in addition to their own, and who exhibit a feeling of friendship.

After all, no one magazine can contain all the wisdom or news of the world. I like to sit down in the evening when the old pipe has been filled and read *The Camera, Camera Craft, Photo Era, Movie Makers* and other magazines dealing with the pictorial art. There is in these magazines a certain something that takes you out of the ordinary rut and makes you forget the unpleasant sordidness that so often oppresses, and takes you out into the fields where flowers bloom and birds sing and work is play. It is this editor's hope that every reader of the *Cinematographer* reads the others.

Talkie Directors

WHEN talkies first made their appearance there was no small amount of concern felt among many of the old-line directors of silent pictures, and quite naturally. They had built a technique that was of high type, but could that technique be so remolded as to fit in the talking picture scheme? That was the problem they had to face.

Predictions were made freely to the effect that the old directors of silent pictures would have to step down and out in favor of a new type of director who would be a product of the stage. However, today finds the majority of pictures being made by the men who learned the business in the silent school, and they are turning out in some cases very excellent product. These directors are proving that they are men of real brains and ability and have won the respect and admiration of those close to the picture profession. Of course, there have been a few importations from the stage, but only a very few. After all, it seems that it is easier for a man with a knowledge of the picture technique to adapt himself to sound and dialogue than it is for a man who knows nothing of the pictures to adapt himself to the technique of the screen. No doubt there will be more directors from the stage, but we venture to predict that the men with silent experience will hold the top hand for quite a few more years.

Song Hits

WITH the song writers turning to Hollywood and the talkies, we see a tremendous change in the popular music field. Whereas only a short time ago most of the popular song hits came from Broadway and the musical comedy stage, today we find the majority of the popular hits coming from the movies.

And what a publicity God-send is this matter of popular songs to the picture men! A song "clicks," is played on thousands of records in thousands of homes, is sung and played over the radio broadcasting stations, and the name of the picture naturally is broadcast with the song. This is worth millions to the picture companies and they should take advantage of it by giving the public the best possible. Let us hope that the executives will turn thumbs down on any more of those "boop-de-boop" abortions and give us some music.

Salaries

INDICATIONS at present point to a concerted effort on the part of the motion picture producers to bring down the high salaries that have been prevalent among actors of the former silent drama.

This writer may be barking up the wrong tree, but he is willing to bet a modest sum that the next two years will see the passing of the five-thousand-a-week salaried stars. While there has been no blatant announcements to that effect, a lot of the companies have not been renewing the contracts of their high-priced stars. Instead, the picture companies are gradually replacing these people with stage players and young and promising players of the screen who gladly take the lead in a picture for anywhere between five hundred dollars a week to one thousand dollars.

Talkies and the influence of the stage are responsible for this change in salaries, apparently. A six-hundred-dollar-a-week salary has always been considered a very nice piece of change in stage circles, and producers apparently have been doing a lot of thinking along this line. True, such men as Tibbett are being given tremendous sums for their picture work, but only by the picture, and not on the old system of a five-year contract. With production cost increased because of the added expense of sound, producers are trimming their corners in the acting ranks. Let us hope that they take some of this savings and give it to the men of the technical side of picture making who, at best, have always been buried beneath the shadows of the players.

Caution

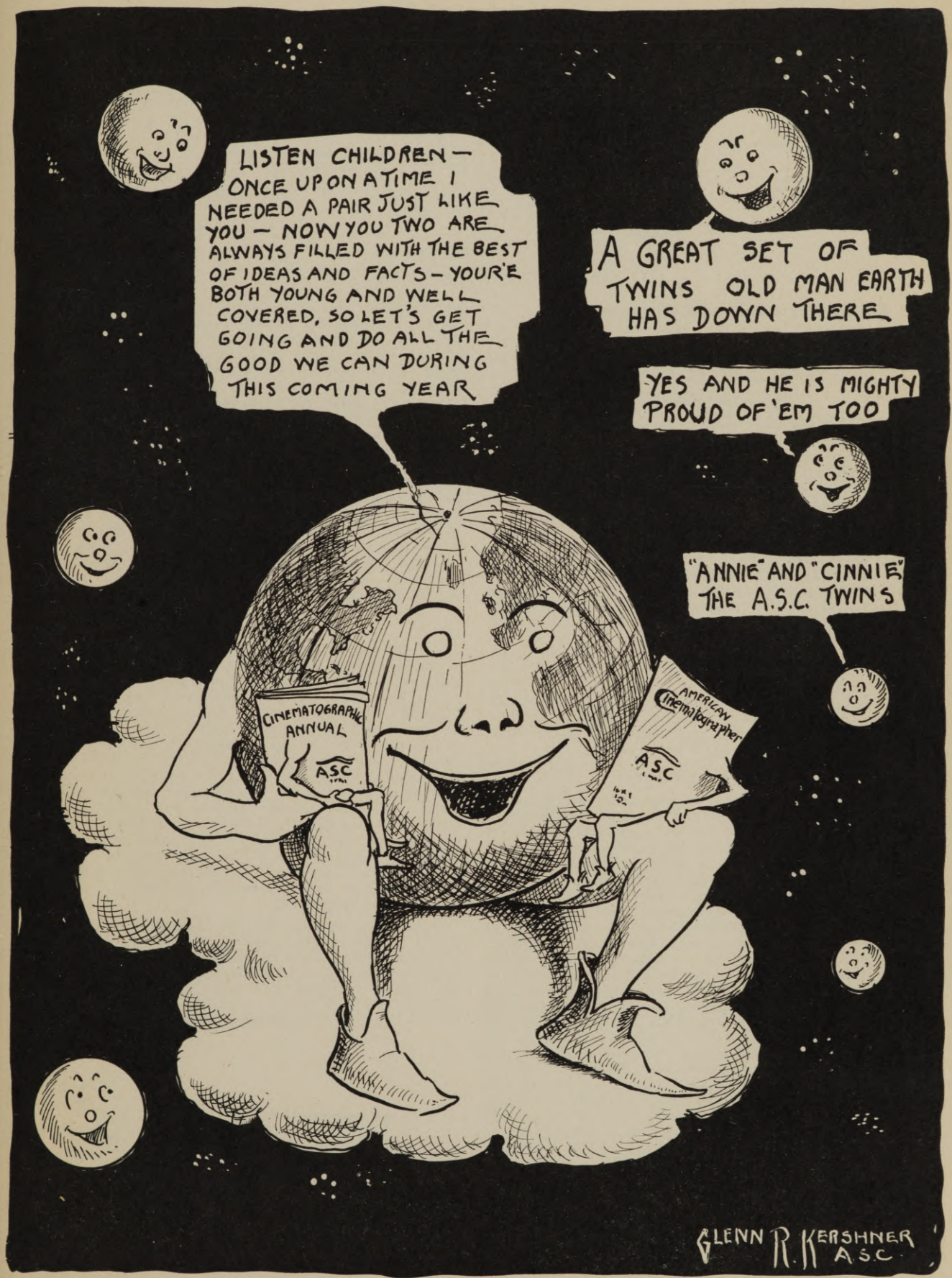
THERE is a certain fascination about the motion picture business that has a greater drawing power than a circus parade. For years movie-struck girls and boys, and even old men and women have been making the long trip to Hollywood, the land of their dreams, believing that once here they will find the end of the rainbow and the pot of gold.

Alas! Thousands of them have found only disappointment, suffering, hunger and abject misery and failure. Some came to act, others to write, others for anything. However, all forget that this is a business that requires trained personnel; that there are already hundreds here waiting for the few crumbs. There are more beauty contest prize winners working in Hollywood laundries and cafes than in any other town in the world.

Not all who come are after jobs as actors Of late I have met a score or more of enthusiastic young men who have given up good jobs back home to come here and try to become cameramen. Practically all they had to recommend them was enthusiasm. What a pity! There are close to a thousand cameramen, of varying classification, in Hollywood today. What chance has a youth armed with nothing but ambition!

And now they are flocking here with the idea of becoming sound engineers. Scarcely a day passes but what at least one finds his way to my office for advice. "Go back home and go to work" is what I tell most of them. Just because some of them have built a four-tube radio set means nothing out here where millions of dollars are sometimes at stake on one picture. Carl Dreher's article elsewhere in this issue tells you that, in round numbers, but a thousand sound experts are needed or used. What chance has a novice, I ask you!

Of course, we have a wonderful climate here in Southern California. There are beautiful palm trees, golden oranges, magnificent flowers and a friendly sun which shines nearly every day of the year. But you cannot eat palm trees, flowers or sunshine. You are forbidden to steal oranges, and the nights are so comfortably chilly that a blanket is needed. So, unless you have proven ability and a bank roll sufficient to keep you for a year, my humble advice is to stay home and forget the glamour of making pictures. After all, even looking at the beautiful stars grows boresome.—H. H.


LISTEN CHILDREN — ONCE UPON A TIME I NEEDED A PAIR JUST LIKE YOU — NOW YOU TWO ARE ALWAYS FILLED WITH THE BEST OF IDEAS AND FACTS — YOU'RE BOTH YOUNG AND WELL COVERED, SO LET'S GET GOING AND DO ALL THE GOOD WE CAN DURING THIS COMING YEAR
A GREAT SET OF TWINS OLD MAN EARTH HAS DOWN THERE
YES AND HE IS MIGHTY PROUD OF 'EM TOO
"ANNIE" AND "CINNIE" THE A.S.C. TWINS
CINEMATOGRAPHIC ANNUAL
A.S.C.
AMERICAN Cinematographer
A.S.C.
GLENN R. KERSHNER A.S.C.

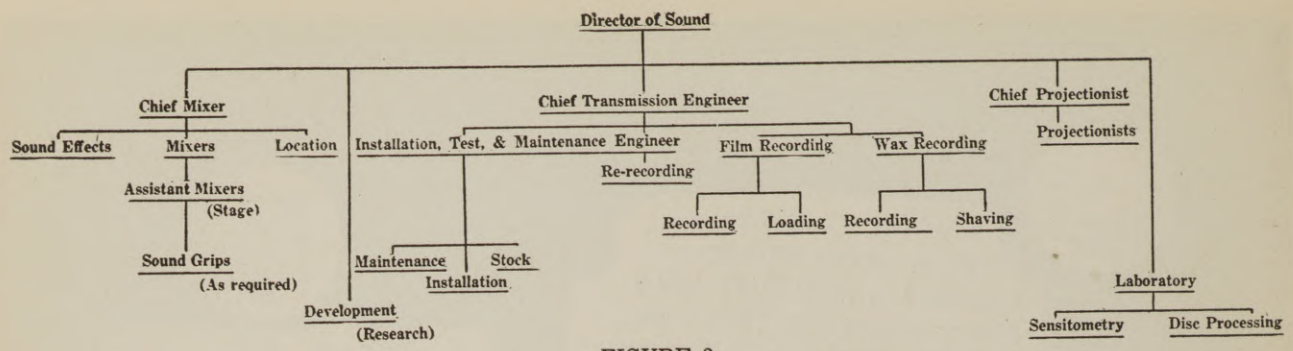


FIGURE 2

Studio using Centralized Installation; Film and Disc Recording.

Sound Personnel and Organization

(Continued from Page 15)

organization of the sound department is somewhat affected by the choice of one or the other method.

Personality Counts

Another reservation with regard to the organization charts to be discussed is that any such scheme is a product of development, personalities, economic factors, and company policy, as much as a logical arrangement of men and functions. The greatest enemy of healthy business organization is the man who makes a fetish out of an organization diagram. Those who have learned this by experience will readily understand that any such scheme is subject to numerous modifications in practice.

Starting at the apex of Fig 1, we have a *Director of Sound*, who may also be known by some such title as *Chief Recording Engineer*. He is essentially a department executive, in a position as much administrative as technical. His responsibilities cover such functions as recording; installation, test, and maintenance of equipment; laboratory control in so far as sound track is involved; a certain amount of apparatus development work, the extent varying with different studios; and frequently projection. In one company the same technical executive directs both the camera and sound departments. The advantages of such a unification may bring about its wider application, unless it should prove too difficult to find men willing and able to tackle the problems of both picture and sound recording.

Must Merit Confidence

Generally the sound director is an engineer by origin, but the successful handling of this job calls for many qualities not always acquired in the course of an engineering career. He cannot judge the ultimate value of his product unless he has a critical appreciation of quality in speech and music. He must be able to translate technical verbiage into concise English, since most of his contacts are with other techincal branches or with non-technical executives. At the same time he should be familiar with the nomenclature and at least the fundamentals of technique in the branches of the business allied with his: photography, cutting, etc. He should have a wide acquaintance among the technical men in his field, so that he will be in a position to add to his staff the best men the market affords at the price he can pay. He must meet the indispensable administrative requirement of being a good judge of human nature and meriting the confidence of his men. There is only one way to acquire and retain that confidence, which is the foundation of organization morale: subordinates must feel that, while the head of the department will exact work and progress on the part of the staff commensurate with the constantly rising standards of the art, he will also see to it that they get their share of the rewards of such progress, and that he will defend them resolutely against unjust attacks, to which a technician in a rapidly developing art is peculiarly exposed.

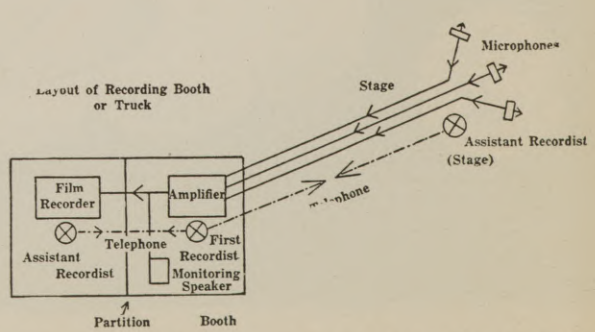
Recording is under the superintendence of a *Recording Supervisor*, whose subordinates carry on the actual work of transferring sound from air to film. The recording supervisor requires essentially the same qualifications as the director of recording, within the scope, at least, of operational problems. He must exercise careful judgment in assigning personnel to the particular associate producers, directors, and leading players with whom they will be able to get along best. The crew assigned to a given company usually consists of a *First Recordist** and two *Assistant Recordists*, one of whom is on the stage while the other operates the recording machine proper. Fig. 3 shows the usual layout of the equipment and positions of the personnel. The microphones are shown on the stage, whence the voice currents travel to the amplifier in a booth or sound truck, then to the recording machine immediately adjacent. If the machine is objectionably noisy, the booth may contain a partition separating the recorder proper from the amplifier and its associated monitoring speaker. The first recordist, who is in charge of the unit, is stationed in the room with the amplifier, the gain of which he adjusts himself. He also mixes the output of the microphones when several are used, and he has final responsibility for the placing of the transmitters. The two assistants are in continuous communication by telephone, with the first recordist on the line intermittently, or he may prefer to give his directions to the assistant directly, the latter then passing them on to the cage man. Where communication through intermediaries is unsatisfactory, the first recordist goes on the stage and contacts directly with the director or his assistants.

Sound and Story

Another question on which opinions vary is the desirability of the sound man understanding something of story values, the technique of acting, and other elements of production somewhat remote from the transmission units and dynes per square centimeter which are naturally his first concern. One count in the blanket indictment brought against sound engineers by many picture people in the early struggles of adjustment, set forth that the sound technician was willing to sacrifice brilliant photography, vigorous action, and every other constituent of a good motion picture to get what he conceived to be good sound. Often enough the complaint was justified, as the early results show. On the other hand, one must learn to walk before one can run, and the utilization of natural distortion in recording, the introduction of "sound perspective," and the following of the action of a photoplay with moving microphones, were all devices either originated by engineers or developed through their cooperation.

It is clearly essential that the head of a sound department should be able to understand the literary and dramatic aspects of picture making, so he may help to create the devices necessary to produce the desired emotional effects in audiences. But should the "mixer," or head of a sound crew, possess this ability?

(Continued on Page 20)



Typical layout of recording booth or truck in studio using portable equipment for recording on film.

SANMEAT MORATANCPICH GIVEATEN

The printer may make it sound strange—but
for the cinematographer it speaks the universal language—

Understood and appreciated

in Hollywood
New York
London
Paris
Brussels
Tokio
Riga
Madrid

AND—WHEREVER PEOPLE HAVE EYES

J. E. BRULATOUR, INC.

NEW YORK CHICAGO HOLLYWOOD

Sound Personnel and Organization

(Continued from Page 18)

Most of the sound executives interviewed thought such traits were a distinct asset, and this view happens to be the one favored by the present writer. One of the leading managers argued, on the contrary, that the business of the play and the merits of the plot were solely the affair of the director, and preferably the mixer's disposition should be such that he will be interested only in getting intelligible dialogue and good music and not over-shooting the amplitude limits of the equipment. He did not want to run the risk of the sound man becoming what is known in the art as a "script-meddler." The fact that a dissenting opinion was expressed shows, even if time should prove it wrong, that final conclusions cannot yet be arrived at in the choosing and training of sound picture personnel.

Stage Psychology

In addition to a good ear, one quality the "mixer" (the term is a misnomer in that he frequently uses only one microphone, and harmful psychologically by its tacit encouragement of excessive manipulation of the gain controls) must have, and that is imperturbability. Of all the elements of character required for the job, coolness in difficult situations is the *sine qua non*. Agitation, except on the part of actors and a few directors, cannot be tolerated on a stage, for the simple reason that there are so many things to be agitated about that a general demoralization would be the result if everyone yielded to panicky or irritable impulses. Furthermore, a show of apprehension or uncertainty results in a loss of confidence which, in the atmosphere of picture production, is extremely harmful. It may, for example, cause actors who play important roles to imagine that their voices will be poorly recorded, and that fear in itself may detract from their impersonations to such an extent as to seriously reduce the dramatic and box office value of the picture. Closely connected with this quality of calmness under tension is the power to make decisions quickly and without elaborate explanations. When the first recordist is asked whether a take is good for sound or not, he should be able to answer yes or no. If he is uncertain, the proper answer is no, with a compact statement of what he believes will improve the take from the viewpoint of sound. In this way production is accelerated and the best mental and emotional attitude maintained among the members of the company. Finally, the sound man who does his work on the stage must have a pleasant personality. A pleasing address is frequently as important as technical knowledge. Of course the sound men cannot expect to get by on amiability alone, but it helps immeasurably when combined with the other technical and personal qualities which are required in his work.

The assistant recordist on the stage, in addition to his function of maintaining communication with the recording booth, generally operates the microphone boom when it is necessary to follow the action. He therefore requires considerable training in practical acoustics.

Microphones are suspended as required by sound grips, who are under the direction of the stage recordist. The assistant recordist in the booth loads and unloads film and watches the machine for irregularities during operation.

Where both portable studio equipment and location sound trucks are in use, a separate crew may be assigned to the trucks, but it is probably more effective to train the personnel to handle both types of equipment, thus enabling the same crew to work through an entire picture, whether it is shot entirely in the studio or in the studio and on location. In some studios all the recording equipment is mounted on trucks and the problem of training personnel for two kinds of equipment does not arise.

Who Should Re-Record?

The production of sound effects may be left to a specialist under the direction of the recording supervisor, or reporting immediately to the director of sound. In either case the sound effects man works with the first recordists, either during the shooting of the pictures or during re-recording. Re-recording is another function which, under the organization system of Fig. 1, in one of the responsibilities of the recording supervisor. It is a moot point, however, whether the re-recording should be done by a specialist or by the first recordist who originally made the sound for the picture. The latter often tends to resent the idea that his work requires changes before it is released, while if the re-recording is placed entirely in the hands of a specialist, the director is put to the trouble of conveying his ideas on sound level and quality to this second technician. The best system is probably to assign re-recording to a specialist who knows the capabilities of his equipment and the best method of adapting the final sound version of the film for effective theatre projection, with consulting service by the original recordist, the cutter assigned to the picture, and the director or his deputy, the picture supervisor and the supervisor of recording have the final decision when disputes arise.

The functions of installation, test, and maintenance are largely self-explanatory and will not require extended treatment here. Whenever possible, it is well to unify these responsibilities in one engineer, although the actual work must be done by specialists. An amplifier maintenance expert, for example, usually is not skilled at stringing light valves, and *vice-versa*, but both functions are vital from the over-all standpoint of recording. It is impossible to record pictures successfully on a large scale unless routine tests, daily frequency runs, etc., are attended to faithfully, and capable trouble-shooters are on hand when some unexpected difficulty arises in spite of preventive measures.

Theatre Contacts Needed

Projection, although a dual function, with picture elements of as much importance as the sound, is in most studios under the control of the sound department. This reason is simply one of expediency. When sound invaded the industry, picture projection had reached the stage where no serious difficulties were encountered, whereas sound projection presented numerous problems of personnel training and addition of equipment. Projection as an uncertain factor in the judging of sound recording may entail a serious division of responsibility if it is assigned to another department, although here, as in many other instances, much depends on the individuals. Where the problem is not solved by handing over studio projection *in toto* to the sound department, at least the maintenance of the sound reproducing machinery is delegated to it. Some sound departments also employ one or more technicians as theatre contact men to check up on conditions of sound reproduction in the field. This is obviously a prudent measure, since too often infinite pains are taken by the producing staff (and an almost infinite amount of money spent) with everything that goes into the negative, after which all hands trust to luck in the presentation of the picture to the public. As far as quality of release prints is concerned, it is gratifying to note that the Academy of Motion Picture Arts and Sciences is taking appropriate action to remedy the present deficiencies.

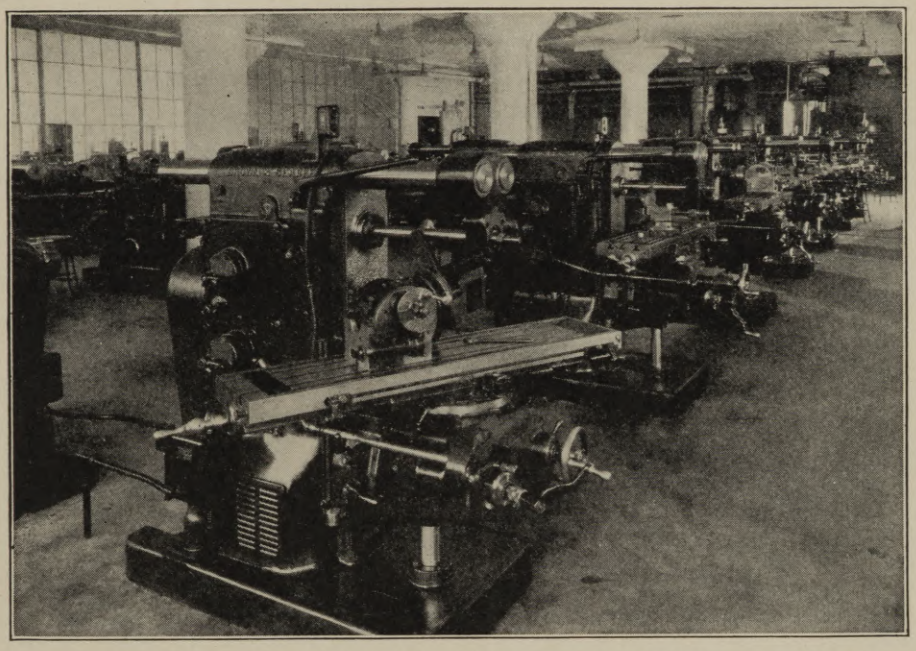
Development and research are obviously topics of importance in an industry as wholly dependent as motion pictures on technological factors, which are still far from a state of perfection. In general, fundamental problems of sound recording and reproduction are best handled in the laboratories of the equipment manufacturing concerns, but many problems, such as camera-silencing, set construction, correction of acoustic defects by re-recording, etc., require work in the field.

Sensitometry, and the control of photographic elements in the developing and printing of sound tracks on film, are of obvious concern to the sound engineer, since the most carefully exposed sound negative may be ruined by poor processing in the laboratory, and, conversely, lack of correlation between the photochemical elements and exposure conditions may result in degradation of quality or even loss of takes. One or more photographic specialists are therefore found on the staff of every adequately organized sound department, and a routine of test strip preparation to indicate optimum conditions of development is carefully maintained.

Centralized Installation

As shown in Fig. 2, recording organization is in general somewhat more elaborate where a central power, amplifier, and recording installation is used instead of portable units. The centralized scheme usually results in increased specialization. The *Chief Mixer*, corresponding to the *Recording Supervisor* of Fig. 1, does not have jurisdiction over the final step of engraving on wax or exposing film. These functions, instead, constitute part of the responsibility of a *Chief Transmission Engineer*, who is concerned with the operation of the plant, exclusive only of the stage, and its maintenance throughout. Alternatively, the mixers may also be under the control of the chief transmission engineer, who then becomes an assistant to the recording director in the immediate vertical line below the latter. With the addition of disc recording, also, various supplementary functions enter the organization picture, e. g., wax shaving, laboratory processing of discs, etc. The latter, added

(Continued on Page 41)



Some of the machines which are making history in the moving picture industry — general view of the tool room, milling department, in the new Bell & Howell Engineering Development Building.

Bell & Howell sees it through!

A new piece of Bell & Howell cinemachinery is never put into production until conditions under which it might operate are carefully surveyed; not a wheel is turned until the whole function of that machine is visualized and prepared for in advance.

From this care in design, and the precision of their manufacture come the constant dependability of Bell & Howell Standard Cameras, both sound and silent.

Wherever movies are made, the name Bell & Howell has rightfully become synonymous with known high quality.

The foresight of its engineers is but a part of the contribution of the Bell & Howell Engineering Development Laboratories to the progress of the industry. Clear thinking and rare skill in application of theory to practice are daily solving the problems of the moment in these Laboratories. Penetrating vision and mechanical ingenuity are constantly at work in anticipation of the future. The submission of your problems is invited.

BELL & HOWELL

Bell & Howell Company, Dept. P, 1849 Larchmont Ave., Chicago, Ill. New York, 11 West 42nd Street. Hollywood, 6324 Santa Monica Blvd. London (B. & H. Co., Ltd.) 320 Regent Street

Established 1907



Camera Crew at Warner Brothers Eastern Vitaphone Studio.

Back Row are Ed DuPar, A.S.C., Ray Foster and Jay Rescher, Cameramen. Front row—Roy Smith, Sam Marino, Edward Horton, assistants.

New Laboratory for Williams Shots

ONE of the most complete laboratories for the making of special process shots and trick cinematography has been opened at 8111 Santa Monica Boulevard. It is known as the Composite Laboratories, and has Frank Williams as the technical manager. Ray Binger and W. R. Ulm are associated with the laboratories, and feel that in having Williams as general manager they have assured the producers of real service of a high order.

The laboratories will specialize on Williams Shots, traveling mat shots and the like, and assure producers of the most rapid service possible. The very latest and most modern equipment has been installed in the new laboratories and give facilities for an almost unlimited amount of work.

Freund Helps Film "Bride 66"

EUROPE'S most famous motion picture cameraman has been called in by United Artists to help film the technicolor sequence of Arthur Hammerstein's spectacular production, "Bride 66." He is Karl Freund, the man who filmed such noted screen dramas as "Metropolis," "Variety," "The Last Laugh" and "Faust."

Freund recently arrived in Hollywood on his first visit to America. His services were suggested by Paul L. Stein, director of "Bride 66," Stein having been associated with the camera expert years ago when both were with UFA in Berlin.

The personalities for which the color scenes form backgrounds are Jeanette MacDonald, John Garrick, Joe E. Brown, Joseph Macauley, Robert Chisholm, Zasu Pitts, Carroll Nye, Max Davidson and Harry Gribbon. The settings were designed by William Cameron Menzies, supervising art director of United Artists.

The first talking pictures have made their appearance in Poland and obtained such an immense success that even the concerts are deserted. The Polish musicians are reported to be about to hold a congress at Lodz to organize themselves with a view to taking vigorous action against the 'talkies'.

Motion Pictures Valuable in Tick Eradication Work

MOTION pictures produced by the U. S. Department of Agriculture aid agricultural education and help to stimulate public cooperation in campaigns against disease and insect pests.

Reports to the department on two films, "Mollie of Pine Grove Vat" and "Southern Cattle Yesterday and Today," used in the tick eradication campaign have emphasized the effectiveness of this form of appeal, says C. W. Warburton, Director of Extension Work of the Department.

Federal and State employees have requested repeatedly, "Give us the pictures while we are building vats and organizing dipping beats," and later have reported, "The motion pictures make a big change among factions opposed to cattle dipping and have helped in getting all of the cattle to the dipping vats."

In the intensive campaign last year workers used two motion picture outfits to show the films in isolated rural communities. The coming of free Government movies was an event, both to the people and to the men putting on the performance. In one instance, the road over the mountain was so rough that it took seven hours to get the U.S.D.A. movie truck the nine miles to the village. The showmen had to use a mule where the road was too steep and too rough for a car. When the road was filled with large stones and stumps so high that the rear housing of the car would not clear them the men ran the car up to the stump, jacked up the rear till it cleared, and then pushed it over.

In 1929, these two motion pictures were shown 457 times to a total of 62,503 persons in Arkansas, Florida, Mississippi and Texas. From 1924 to 1929 the pictures were shown in rural communities 2,429 times to an attendance of 370,778 people. They are shown usually in rural school houses or out-of-doors to audiences ranging from 50 to 300 persons. The pictures are an event in isolated communities. Frequently the whole family attends. The younger ones, and sometimes the older members, come merely to see the movies, but as a result they gain information.

Another "GOLD RUSH" *is on*

in

ALASKA!

THOUSANDS of men are rushing to the Ruby District where they hope to dig their fortunes out of the ground. Alaska has gone Gold-mad again!

THIS is all very well for the prospectors and "sour-doughs" but for busy men and women who have no time for gold rushes, we offer an opportunity to make an investment in Alaska's gold fields which will not require their enduring the hardships of the miner.

The RUBY GOLD DREDGING COMPANY, *Ltd.*

A California Corporation

controls 1007 3/10 acres of proven gold producing property on Goldstream Creek, near Fairbanks, Alaska. Here modern dredging methods will replace the "pan" and pick of the miner. Our property runs in excess of $2.00 of gold per cubic yard. Gold is being taken out by dredgers on this same stream above us, and also below us on the same stream.

IF YOU are interested in learning the details of this investment proposition we will be pleased to mail you a complete bulletin explaining everything. We believe we have the opportunity you are looking for. Let us give you the details and then you may judge for yourself.

The RUBY GOLD DREDGING COMPANY, *Ltd.*

Suite 510 Kress Bldg., Long Beach, Calif.

Fiscal Agents:

J. B. Halbert & Company

1216-17-18 Financial Center Bldg.
704 So. Spring St.
Los Angeles, California

Telephone
VAndike 0717

Cut Out and Mail Today

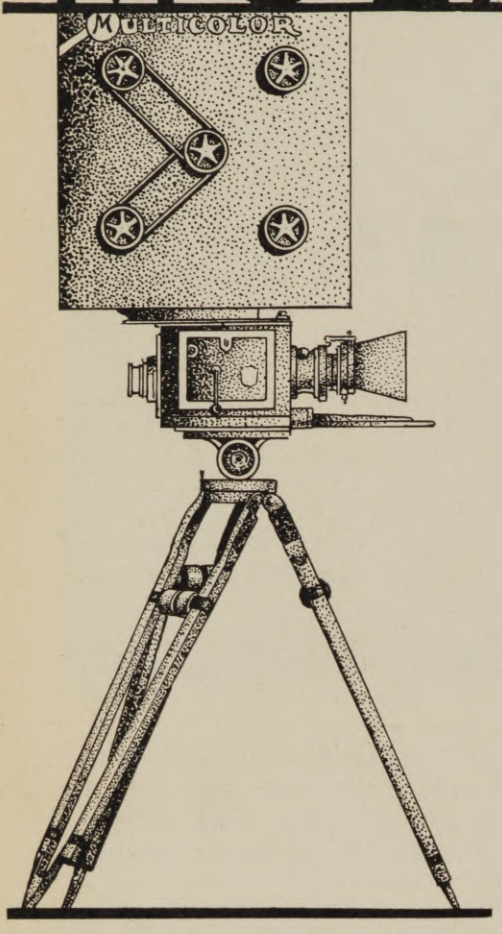
J. B. HALBERT & COMPANY,
1216-17-18 Financial Center Bldg.,
704 So. Spring St., Los Angeles, Calif.

Without any obligation to me, please send me detailed information regarding The Ruby Gold Dredging Co., Ltd.

Name

Address

MULTICOLOR



TODAY'S ACHIEVEMENT — TOMORROW'S REALIZATION

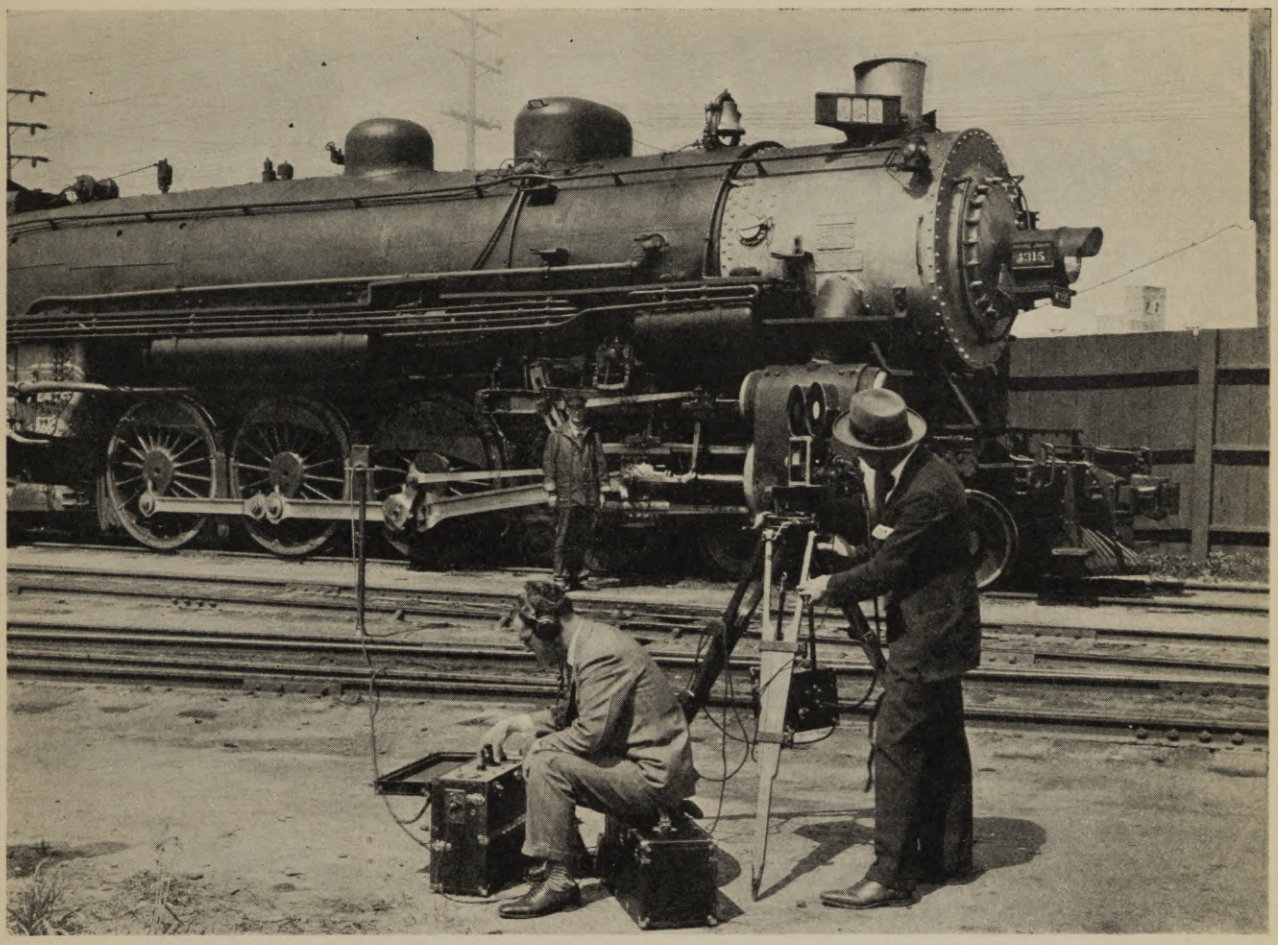
Recognized throughout the motion picture industry as the outstanding development in the field of colored cinematography. ❖ Now available for studio and commercial use. ❖ Color and sound-on-films in one process. ❖ The only successful color process using standard cameras and normal lighting.

Protected by U. S. and foreign patents.
For information, write or call

MULTICOLOR FILMS, INCORPORATED

201 N. Occidental Blvd. Los Angeles, Calif.

Telephone DUnkirk 5401



Tanar Portable Recorder

TANAR CORPORATION

1107-1115 North Serrano Avenue

Cable Address:
TANARLIGHT

HOLLYWOOD, CALIFORNIA

Telephone
HE 8339

At Last It Is Possible!

For many years Directors and Camera Men have desired special effects in their films after the sets have been shot and dismantled, or it is too late or too expensive to make a retake. Such effects as making a long shot into a close-up, putting in lap dissolves and fades, making a miniature of a scene and double exposing it over another scene, and other special effects.

To meet this situation, the Burton Holmes Laboratory has installed one of the new DEPUE 35 mm. Optical Printers which will do all of the above stunts and many more.

Keeping abreast or ahead of the times has always been the policy of this organization.

Burton Holmes Laboratory

7510 N. Ashland Ave. CHICAGO, ILLINOIS

FOR BETTER WORKMANSHIP

SUPERIOR ENGRAVING CO.

Telephone HE 8149
Hollywood, Calif.
1606 Cahuenga Ave.

Zinc Etchings, Copper and Zinc
Half-Tones, Color Work
Designing, Electrotypes,
Mats, etc.

Cranking for Uncle Sam

(Continued from Page 9)

propped up in the characteristic attitude of a grasshopper ovapositing, with her hinder parts buried in the earth, and with her bulging eyes anxiously watching Tucker's frantic efforts to get her in focus, and with her abdomen straining in a frantic effort to get her job of egg laying done before the unknown danger that threatened her should befall. Imagine also, if you must, the Director brooding ineffectually over this touching scene, gathering a few buffalo chips to help in giving the Bell and Howell the proper tilt, but otherwise maintaining a they-also-serve-who-merely-stand-and-wait attitude. Human stars, however great, pay more or less attention to what the Director says, but a female grasshopper, intent upon ovaposition, pays no attention whatever to what a director representing the federal Department of Agriculture may say, and little attention to what he may do—if he doesn't make any quick motions. So the Director just hovered about, hoping against hope that the eggs would hold out.



The Grasshopper.

Finally the line-up was perfect, Tucker took his cheek out of the Wyoming dirt, held the camera down with one hand and began to grind with the other. The grasshopper, with Spartan fortitude, held position for forty feet. Then her work was done. She pulled herself out of her "nest," hurriedly covered the hole by scraping in loose earth with a spare pair of legs—and zipp—she was gone!

No less an authority than Dr. L. O. Howard, chief of the Bureau of Entomology, told us that our ovapositing scene was one of the best pieces of cinematography he had ever seen.

Experiences like this, in our service, are interlarded with experiences such as that of our Chief Cinematographer, George Goergens, who was loaned to the Army for some experimental work, during the World War. The first plane that he travelled in crashed. He escaped with his life and with his Bell & Howell intact, but sustained innumerable bruises and an injury to one knee that laid him up for many months. To make matters worse, they bundled him into another airplane to take him to a hospital, and the motor of this plane went bad soon after the take-off. Between the time when the motor began to miss, and the time, about a thousand feet farther down, when the pilot finally got it to hitting all 'round, George Goergens had definitely decided to specialize in ground work from that time forward—if at all. That's why our Chief Cinematographer is so willing to let the younger boys have all the flying assignments—boll-weevil dusting work, alfalfa-weevil dusting, forest-fire work, and the like, which involve photography from the air.

There are certain technical aspects in which our work differs radically from that of the cameraman of the motion picture industry. We have a small studio in Washington where we have lights and sets for use in making the few interiors that we are called upon to stage, and we have compact "suit-case" arc outfits that we use in making scenes in the field where current is available, but, in the main, our work is such that neither subject nor illumination is under control.

Nothing, for example, is less amenable to human control than a hen—and not a season passes without bringing us some poultry work. True, you can incarcerate a hen, and thus control her movements in general and at large—but try to make a hen do a specific thing at a given time and place! Get your

WILLIAMS SHOTS

We have the largest laboratory in Hollywood devoted to Composite Cinematography . .
We are
now
located in
our new laboratory
with most modern equipment
and unlimited facilities : : : : : : : :

WILLIAMS SHOTS

Composite Laboratories

8111 Santa Monica Blvd.

camera all lined up and focused, and then try to get a hen to come to the henhouse door, pause—and cackle. Or try to get a hen to enter a trap-nest, in a natural and nonchalant manner, while the camera is trained on her. Try to get a shot of sheep grazing on a mountain pasture, spread so as to illustrate the "open herding" advocated by the grazing experts of the Forest Service. Try to get a shot of an aristocratic Jersey cow—one of those rare creatures that produce over a thousand pounds of butter-fat a year—and get the desired footage before she steps back and looks askance at the camera. Try to get a shot of a luxuriant growth of alfalfa and make it look as a professor of agronomy thinks it ought to look. Try to make an interior shot in a dark sheep-shed, a hundred miles from any 110 volt generator, with nothing but tin dish pans for reflectors.

Some of these things can't be done to the satisfaction of everybody concerned, and those that can be done involve expenditures of time and patience that would appall the cameraman accustomed to working where both light and subject are always more or less under control. Fortunately our overhead is relatively small, as compared with overheads in Hollywood, so we can legitimately take the time required to get the results required in work that must always run the gauntlet of severe scientific criticism before it can be released.

Dowling to Manage Industrial Films

PAT DOWLING has been appointed to the general management of the Industrial Picture Department of Metropolitan Sound Studios, a newly organized feature of this service studio for the filming of all kinds of business and commercial talking pictures, according to announcement by William S. Holman, general manager of Metropolitan. Dowling was associated with the Christie Film Company for eleven years as publicity and sales director.

Associated with Metropolitan's new department will be Curtis L. Mick, as production manager for the industrial pictures. In charge of recording for Metropolitan's industrial department will be R. S. Clayton and A. M. Granich, Western Electric engineers. These sound engineers and other department heads at Metropolitan will handle commercial and industrial picture recordings as well as regular theatrical pictures which are produced at this studio.

Metropolitan's Industrial Picture Department is now filming talking pictures, for non-theatrical uses, for several large corporations in various lines of industry. Western Electric sound system is being used both in the studio and with portable recording equipments which are making pictures at the present time in San Francisco, Portland, and other Pacific Coast points.



in production with an array of sure-fire all-talking, all-sound pictures,—100% synchronized at 33⅓ R.P.M., in 35 m/m and 16 m/m, and priced no higher than silent subjects!

0301 "THE RECORDIONS"
Featuring Doris Becker, the personality girl.

0302 "THE RECORDIONS"
Featuring Don Clifford, the Midget Musicmaker.

0303 "HAWAIIAN NIGHTS"
Featuring Johnny and Joe with Neva Atherton.

0304 "RECORDION MINSTRELS"
An orchestra black face minstrel specialty.

0405 "DARK BROWN BLUES"
Featuring King Tut's Brown Jug and Washboard Band.

0406 "GRANADA ROCKETS"
A famous chorus of nifty steppers. With orchestra.

0407 "YELLOWSTONE PARK"
Nature's greatest wonderland in sound.

0408 "AN EVENING AT HOME"
Featuring Jack and Patricia, famous radio entertainers.

0509 "GORDON STRING ENSEMBLE"
A tuneful trio featuring Miss Edith Gordon.

0510 "TWINKIE TOWN TALES"
An amusing fairy tale in cartoon and sound effects.

0511 "DARKTOWN REVUE"
An all-colored revue with an all-colored Dixie orchestra.

0512 "GIVE AND TAKE"
Featuring Tony Kabooch, radio's favorite entertainer.

All RECORDION Dealers stock Recordion Pictures. If your dealer does not, write direct.

Each 16 m-m subject measures approximately 200 feet and sells for $20 each, with record.

National Film Publicity Corporation

311-409 South Sarah Street Saint Louis, Missouri

Manufacturers of the RECORDION SYNCHRONIZER *for all makes of portable projectors.*



By WILLIAM STULL, A. S. C.

WALKING down Hollywood Boulevard the other day, I was stopped by an enthusiastic amateur who had recognized the A. S. C. pin I wore. After the usual apologies, he confided that he had been interested in still and movie photography for some time, but that there was one point that he simply couldn't understand: What were these yellow glass *Color-filters* for, and how are they used? As there are probably quite a number of other amateurs worrying over the same question, perhaps the answer I gave him may be of some interest to them.

Why Filter?

In the first place, color-filters are a means of correcting the discrepancies between the way the film sees colors, and the way our eyes see them. That is, the film sees colors according to one scale of brightness, and our eyes see the same colors with quite different degrees of brightness. If we arrange a strip of cardboard painted blue-violet at one end, and graduating through the entire spectrum to red at the other end, with yellow approximately at the middle, our eyes will register the middle section as being the brightest, with both ends shading off deeper and deeper. But if we photograph this same colored strip, we will have proof that the film sees color very differently from the way we do, for our picture will be brightest at the blue end, and then shade down to an almost dead black in the red section. This is because the blue light (and, beyond it, the invisible ultra-violet) is the most active photographically, while the red is almost inert. Therefore, if we want to get anything like a true rendition of the color-values our eyes see, we must in some way hold back a portion of the powerful blue rays, and give the weaker greens, yellows, and reds a chance to make their impressions upon the film. That is what light-filters are for. The better grades are so made that they not only retard the blue rays, but quite absorb the invisible ultraviolet frequencies. But, in order to work under all conditions, we must have a variety of filters: some that hold back only a little of the blue, and some that hold back a great deal of it. Therefore filters are made in several grades, the light-colored ones holding back only a moderate part of the blue, while the darker ones retard more and more of it. However, no commercial filters hold back all of the blue rays, for that would be as serious an exaggeration in its way as the original condition the filter is intended to correct is.

Now, when these filters are used, it will be seen that they are removing a portion of the light (and the most active portion, at that), *but they are not adding anything to take its place.* Therefore, in order to keep the exposure correct, a longer time must be given, or a larger amount of light allowed to work on the plate: *and this increase must be directly proportioned to the amount of blue light cut out by the filter.* In amateur movie work, where the time of exposure is usually fixed, this compensation must be made by opening the diaphragm on the lens. In order to make this compensation accurately and conveniently, the manufacturers have determined what is known as the *filter factor* for each of their various filters. There are so many different makes of filters on the market today that it would be impossible to give here the factors of anything like a comprehensive number of them; however, among the most popular ones are the *Wratten* K series made by the Eastman Company, and of these the ones most used in amateur movie-making are the K 1, the K 1½, and the K 2. The lightest of these, the K 1, absorbs 60% of the blue rays, and passes nearly 80% of all the others; its *filter factor* is 1.5. That is, when using a K 1, the normal exposure must be multiplied by 1.5. With the K 1½, the factor is 2; and with the K 2, it is 3. Therefore, in practical use, with a K 1 the diaphragm opening should be increased half a stop; with a K 1½, a full stop; and with a K 2, a stop and a half. In other words, if a scene required *f*:8 as a normal, unfiltered exposure, it would require *f*:6.3 if a K 1 filter were used, *f*:5.6 with a K 1½, and *f*:4.5 with a K 2; all of which is a powerful argument in favor of the use of large-aperture lenses. Another aid in quickly computing the increased exposure for filters is given by Mr. Herbert McKay, F. R. P. S., the brilliant head of *Photo-Era's* Kine Department. In common with the majority of photographic authorities, Mr. McKay is strongly in favor of the use of the *Cinephot* and *Dremophot* meters as guides to correct exposure: and for those who use them, he recommends taking the speed factor with a 2x filter as 32; that with a 3x as 48; and that with a 4x as 64; and proceeding to use the meter as usual, receiving the correct exposure as a direct reading, without further computation.



Pan or Ortho?

But it is plain that if we are going to cut out the blue rays, we must use a film that is sensitive to the remaining ones. The ordinary emulsion—technically termed *Orthochromatic*—is moderately sensitive to these yellow and red rays, so that filters give a considerable improvement when used with it, but to make the fullest use of the benefits given filters, they should be used with a film which is sensitized to all of the colors. This is termed *Panchromatic* film (from two Greek words, meaning *all colors*). Because it is comparatively new, many amateurs feel somewhat timid about trying it; but there is no need to do so, for, as far as the user's manipulations go, there is no difference between *Ortho* and *Pan* film except that the latter gives a truer rendition of color-values. *Both give their best results when used with filters, and both are equally easy to use.* Not so many years ago, when *Pan* was introduced to the profession, the majority of studio cinematographers felt quite the same way about it; but after they saw the superior results it gave Ned Van Buren, A. S. C., who was the first cinematographer to use Panchromatic film in regular production (on Will Rogers' *The Headless Horseman*) more and more dared to try it, and found it so far superior and so simple to manage that—well, today at least 98% of the films made are photographed on *Pan*. Therefore, to the amateurs who doubt the advisability of changing to *Pan*, let me say, go and see any picture made more than five years ago, and then see any modern one (particularly such photographic gems as *White Shadows in the South Seas*, by Clyde deVinna, A. S. C., or *The Lone Star Ranger*, by Dan Clark, A. S. C.—and then make your own decisions.

A Hint From Overseas

It is always a pleasure to read the various photographic and cinematic magazines that reach us from abroad. Among the most interesting of these is *The Amateur Photographer*, from England. Its cinema department contains the writings of many of Britain's best cinematic minds, among whom is Mr. Sigurd Moir, a well-known British professional cinematographer. In a recent issue, Mr. Moir makes a suggestion that I am sure will be of benefit to American readers, as well as those for whom it was written.

Referring to some reports of trouble with the familiar "humidor" film cans, Mr. Moir suggests that instead of using water to moisten the pads, a solution of camphor in four parts of olive oil (in other words, the familiar Camphorated Oil of the nursery) be used. This will preserve the film base and the emulsion, and also give much greater freedom from the un-

(Continued on Page 35)



Do not guess

Always use a

CINOPHOT
or
DREMOPHOT
EXPOSURE METER

Obtainable at all Dealers and at Eastman Kodak Stores all over the World

DREM PRODUCTS CORPORATION
152 West 42nd Street New York, N. Y.

Price
$12.50
Ask your Dealer



Could you use extra

MONEY?

A few hours a week may increase your income materially

FOR DETAILS FILL IN AND MAIL

Circulation Dept.,
American Cinematographer,
1222 Guaranty Bldg., Hollywood, Cal.

Please send me details explaining how I can increase my income.

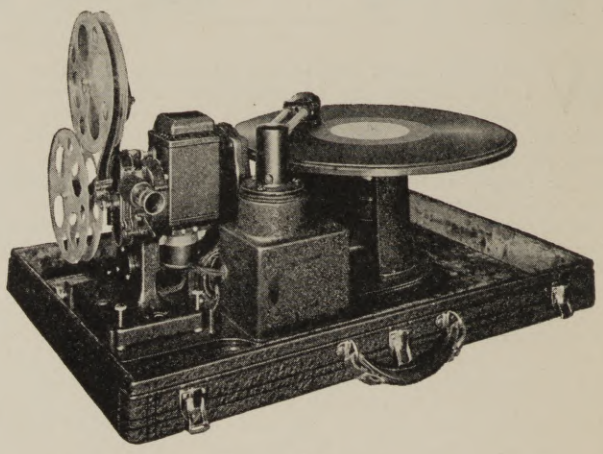
Name

Address

DeVry Introduces "Cinetone" For Industrial Work

THE Q. R. S.—DeVry Corporation of Chicago has just released an announcement of their new 16 mm. Cinetone talking picture equipment which is an innovation in its forceful effectiveness as an aid to sales, advertising and publicity.

The Cinetone is one combined unit, comprising a 16 mm. projector and 16" 33-⅓ R. P. M. phonographic record turntable. Synchronous motor operates both projector and turntable simultaneously. There is no chance for imperfect synchronization. Both projector and turn-table cannot operate except at a fixed speed.



The new "Cinetone"

Instead of several units to assemble, the Cinetone is one integral unit. The amplifier is of the latest design, employing only one No. 224 screen grid tube, one 250 amplifier tube and one 281 rectifier tube. As in the case of radio amplifiers, when used on D. C. a converter is necessary.

Brilliant illumination, to meet all 16 mm. requirements, is accomplished through the use of a 20 volt, 250 watt prefous projector lamp 110 A. C. The Cinetone has a self-contained transformer which converts 110 A. C. to 20 volt.

Absolute control of volume to meet all requirements of room size or acoustics is provided for by a volume control at the base of the cinetone, thereby making possible the fade out or swell out of sound from a whisper to such volume as is suitable for large gatherings.

The lens used is the new powerful "Big Bertha Graf 2" Anastigmat. This in conjunction with the New DeVry condenser, makes the most perfect optical system ever employed in DeVry projectors. So powerful is the light that at a 50' throw, a brilliant illumination over an area of more than 8' on the screen is clearly projected.

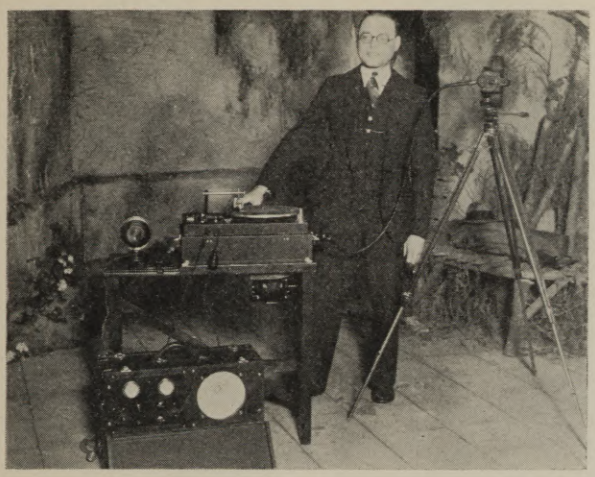
The 16" record operating at 33⅓ R .P. M. is professional in size and speed, thereby accommodating 400' of 16 mm. film (the equal of 1000' of 35 mm.) In other words, the record will operate throughout the entire showing of one full reel of film.

The DeVry Cinetone is already being accepted by manufacturers and other users of industrial and educational films with unusual enthusiasm. It is further interesting to note that dealers in amateur motion picture apparatus are ordering and delivering the Cinetone for home use. Several film producers are already equipped and making releases on 16 mm. and 16" 33⅓ R. P. M. records of comedies, etc. This foretells the coming advent of the use of talking movies in the home and which will doubtless soon result in some of the larger productions in the professional field being released for home consumption.

A Central Socialist Film Organization has just been instituted at Brussels, Belgium. It comprises 52 members under the presidency of M. Boulanger. The object of the organization is stated to be the centralizing of film renting and the sale of cinema equipment.

Have you ordered the Cinematographic Annual?

New Home Talkie Device



B. B. Gottschalk and His New Invention

ANOTHER home talkie device has been announced. This one is the invention of Bert B. Gottschalk, a Hollywood man with years of radio experience.

Gottschalk has not placed his device on the market as yet, but he claims his 16 mm. talking apparatus will be cheaper than anything yet offered the public. He has devised his apparatus so it may be used, he claims, with Q. R. S.-DeVry, Cine-Kodak Model A, and Victor 16 mm. cameras without any change in the camera being made. Gottschalk says a slight camera change is necessary in other makes. Extreme portability is one of the features the inventor stresses. The apparatus is shown above with the inventor.

Victor Announces New Projector For 16 Millimeter Pictures

THE Victor Animatograph Company, makers of the Victor 16 mm. cameras and other 16 mm. equipment, has just announced a new model 16 mm. projector. It is called the Model 3, and according to the announcement is identical to the present Model 3-B Victor Projector except that it is finished entirely in Crystal Black Enamel with all steel and brass parts chrome-plated.

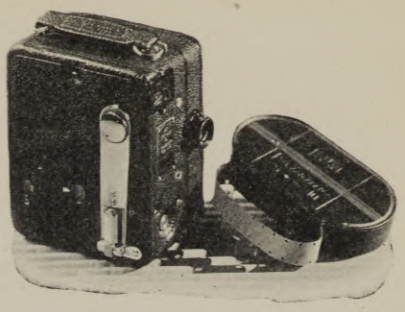
Among the exclusive advantages claimed for Victor Cine-Projectors are: A film moving mechanism that insures perpetual steadiness, absence of damaging pressure on the film at the aperture, an automatic trip that cuts off power and light if film fails to track because of incorrect threading or defective splicing, superior illumination, built-in film rewind, and other desirable features. Victor-Projectors have double claw film movement, universal over-size motor with variable speeds and reverse action, a framing device racket pinion focusing, and all other requisites of a high grade projector.

The New Model 3 Projector will retail for $25.00 less than the Model 3-B. List Price of the Model 3, including 2" Victor-Graf Lens, 200 W. 110 V. Lamp, and carrying case is $175.00.

A NEW, MORE POWERFUL LAMP—250 Watt, 28 volt—will soon be ready for delivery with a VICTOR LAMP RHEOSTAT very similar in appearance, shape and size to the present No. 10 Victor Lamp Rheostat. This new Lamp and Rheostat can be used with any Model 3, 3-B or 3-C Victor Cine Projector now in service.

The Spanish Government has asked the Ministers of Labor and of Public Instruction to work out protection measures for the Spanish musicians, who are much prejudiced by the invasion of colored and foreign musicians, and by the sound-film. It is planned to increase the entertainment tax rates for wired cinemas and for music-halls in which the orchestra is wholly or partly composed of foreign musicians.

Order Your Annual Now!



KINAMO S.10 is the smallest 16 mm. movie camera

Kinamo S. 10 is so compact and so light that it fits easily into your pocket. This camera is spring driven, equipped with a Zeiss Tessar F/2.7 lens and holds 33 feet of 16 mm. E. K. film, orthochromatic or panchromatic. Such a convenient length enables you to take several complete shots using all of the film, thereby getting quick developing service.

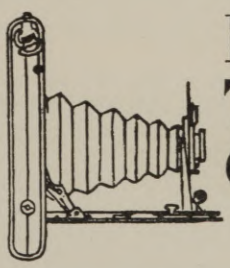
Price $85 at your dealer.

Zeiss Ikon

CARL ZEISS, Inc.

485 Fifth Avenue, New York

Pacific Coast Branch: 728 So. Hill St., Los Angeles.



Let's Trade Cameras! ---Bass

Stills for Movies	Old for new
Movies for Stills	New for old

Bass is internationally known wherever cameras are used . . . stills or movies . . . amateur or professional apparatus.
Write your requirements. Give full description of what you have for appraisal. Write Bass first.

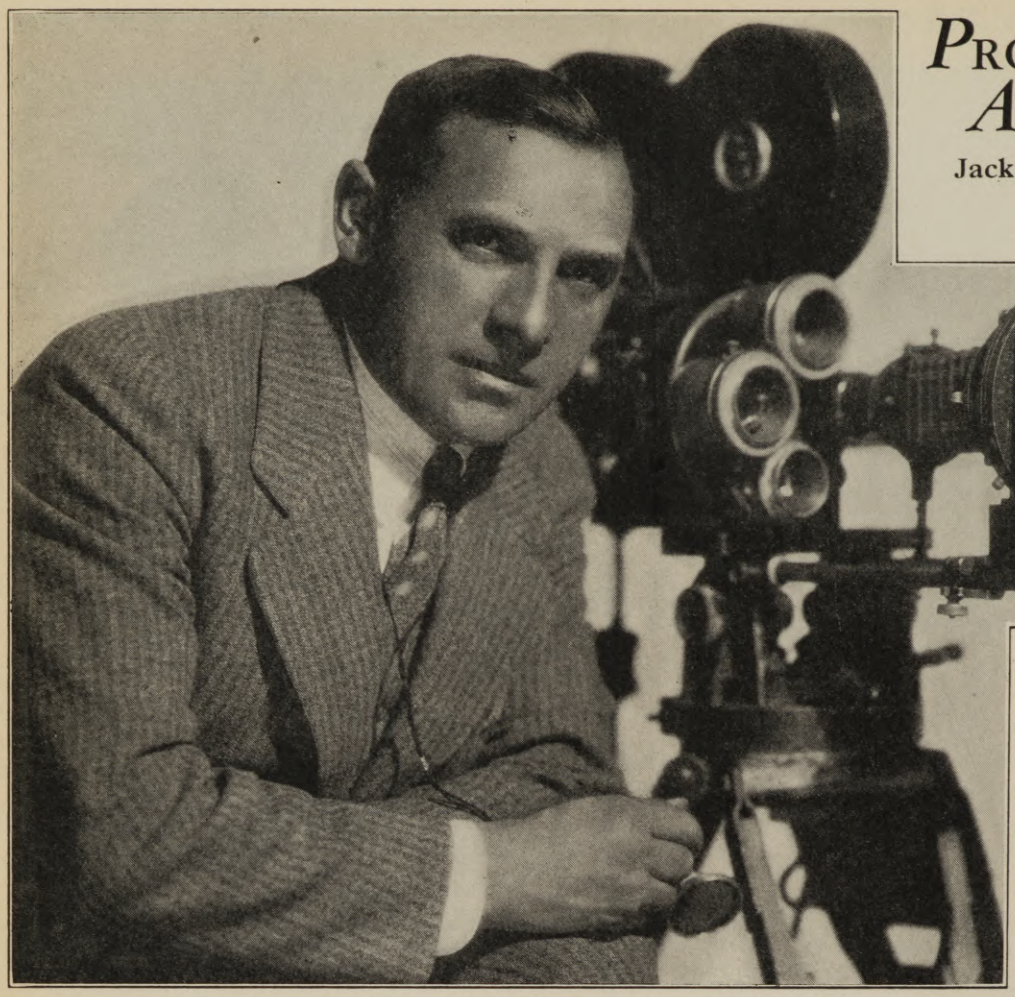
BASS CAMERA Company

179 W. MADISON ST.

Chicago, Ill.

State 7410





PROFESSIONAL AMATEURS

Jackson Rose, A. S. C.

A Professional Cinematographer Discovers the *Filmo* and Finds New Pleasures.

By Wm. Stull, A.S.C.

Jackson Rose, A. S. C., with his Professional Bell & Howell

FOR a professional cinematographer to find real pleasure in amateur cinematography may seem like an instance of carrying the proverbial coals to Newcastle, but the fact remains that, one by one, the outstanding members of the camera profession are discovering the fascination of personal movie-making. The latest to make this discovery is Jackson J. Rose, A. S. C., whose standing in the industry is attested by the fact that, in addition to being a respected member of the American Society of Cinematographers, he is Vice-President of Hollywood Local 659 of the International Photographers.

Mr. Rose is one of the veterans of the industry, having started his career with the famous old Essanay Company, back in 1910, when the movies really were in their infancy. During the ten years that he was with Essanay, he photographed practically all of the stars of the time, and many of those of today who began their careers at the famous Chicago plant.

After leaving Essanay, Mr. Rose came to the coast and joined the Metro forces. There he remained for over two years, after which he moved to Universal, where he stayed until 1928. For a while then he free-lanced, and was in such demand that he made pictures in almost every studio in Hollywood. For the past few years, however, Mr. Rose has professionally settled down at the Tiffany Studio, where he has been head of the camera department.

As the readers of *The American Cinematographer* already know, Mr. Rose is of a very inventive turn of mind, and is constantly devising improvements for his cameras and accessories. He denies, however, that he is likely to do the same for his 16 mm. outfit, "—because," says he, "I'm too busy enjoying it!"

"Yes," he says, "I'm a real amateur movie-maker now. I'll admit I hesitated a long time before I made up my mind to try it. You know the idea that many professional photographers have about amateurs—they think only of the careless, photographically incompetent, *Brownie* snapshooters, and entirely overlook the thousands of really capable, earnest amateurs. I made the same mistake, but when I began to see the things that some of these advanced amateurs could do with their *Filmos*, I changed my mind quick, and now I'm really an amateur. Of course, I make moving pictures for a living, too, but you know the dictionary says that an *amateur* is one who does a thing because he likes it—and that makes me an amateur on the set as well as off. But since I got my *Filmo* I'm afraid that I'm getting even more interested in my camera work off the set than on.

"Besides, I really think that the 16 mm. movie-making hobby for a cameraman is in keeping with his work, and is a practice that should be encouraged among the profession. It is very interesting to photograph one's family, and you can do so many things with a small camera that you can't do with a professional one. Take the matter of projection, for instance. Of course, to project standard size film, which is highly inflammable, one would need a fireproof projection booth, with costly apparatus and all the necessary precautions for its safety, and, besides, there would be all sorts of red tape about fire inspections, and so on. So it is hardly practical for a cameraman to have a standard projection room in his home. Using the non-inflammable 16 mm. film, however, with only the ordinary amount of caution one can have a projection room right in one's living-room, especially with the light, portable projectors and screens we now have.

"It's a great source of entertainment for the entire family to see themselves on the screen, especially when one has taken the time to work out simple little scenarios with the family as actors. I don't know, though, which they get the most fun out of—actually acting, or seeing themselves on the screen. At any rate, I know that my family has had a lot of both kinds of fun since I bought my camera. I've worked up several little stories —nothing pretentious, but lots of fun to make, and the sort of film that doesn't get put on the shelf nearly as soon as a reel of mere 'animated snapshots.' In one of my films, for instance, I have the plot center around a surprise party given to my wife by our friends, and in it I cast my brother-in-law

as the mysterious 'heavy.' Of course, most married men are sure that their brothers-in-law are just naturally fitted for such a part—but they'd better be sure to pick wives with brothers who can act the part before the camera as well as this one did. All through the picture I had him slinking mysteriously around corners, peeping furtively from behind trees, or stealing secretively off with some parcel concealed under his coat. Really, he was most effective, for he furnished an element of suspense to the picture, and then the final comedy punch. I ended up by showing him stealing quickly into the garage, and then moved the camera after him on a 'dolly'; and there, at last, was the explanation of his mysterious actions, for he was busily engaged in stirring a huge tub of home brew!

"But perhaps the best part of home movie-making is the cheapness of it all. Gosh! I expected it would be much worse than it really is. And, honestly, I get a great kick out of it, for it's even more interesting to shoot that film than it is to do my regular work in the studio. This reversal business is a funny thing for a professional cameraman to get used to, though—this business of not having any negative, and getting your original film back as a positive. It really seemed uncanny to me at first—but it just naturally cuts down the expense of the thing, and that's an angle all of us can understand without any further explanation!

"I recently bought a *Filmo 70-D*, together with a projector, a screen, and—oh, well, I got the whole works and I'm telling you, it's the best investment I've ever made. The camera is as perfect as a camera can be, and I know it's built with the same precision and fine workmanship that its professional brother is—and that's about as close to perfection as has ever been reached. I ought to know, for I've been using Bell & Howell professional cameras for twenty years. In fact, I had the good fortune to be the first professional cameraman to use a Bell & Howell camera, for back in 1910 I used Bell & Howell No. 1—and I'm still using one.

As one of the pictures here shows, I mounted my *Filmo* on the finder of my big Bell & Howell, and I very often shoot both of them at the same time. I've gotten some very good scenes that way—and the surprise of it is that the *Filmo* is so very quiet that I don't need to shoot from a booth when I'm making talkie scenes. The revolving turret is also a wonderful feature, because I invariably want to get closer shots, without moving the camera, and the turret arrangements let me do it by shifting to a longer focus lens just as I do on the big camera.

"That little camera is certainly a compact and accurate little machine, and its seven speeds are a marvellous help to us all, professionals and amateurs alike, for the different speeds enable

(Continued on Page 44)



Rose lines up a shot with his Filmo.



Rose with his Filmo attached to his professional Bell & Howell



665 NORTH ROBERTSON BLVD.
WEST HOLLYWOOD, CALIF.

Roy Davidge Film Laboratories

Negative Developing and Daily Print exclusively

6701 SANTA MONICA BLVD.

GRanite 3108

Esthonia

FILM production in Esthonia is still very "young." It was only in 1928 that the first producing organization, *Estonia Film*, was founded by two newsreel cinematographers, the brothers J. and P. Parikas. This firm now has a studio at Reval, which produces "native" films and excellent educationals. Scandinavia, Poland, and the Soviet Republic constitute the market for Esthonian films, for the 18 theatres in that country are obviously not sufficient to repay the cost of production.

Collins E. R. P. I. Auditor

D. C. COLLINS has been appointed General Auditor of Electrical Research Products as the latest of a series of promotions following the appointment of R. E. Anderson as Treasurer of that Company.

Mr. Collins takes up the duties of his new position immediately.

Eyemo Scores Again

ANOTHER of the many outstanding newsreel beats achieved by the Bell & Howell Eyemo was scored in Chicago recently by this popular semi-professional movie camera, when Joseph Sandman, a film broker, jumped from an eight-story window, in what is said to be the longest leap ever made in Chicago from a burning building to a fire net.

Because of the extreme adaptability of the hand-held Eyemo, Charles David, Chicago Daily News-Universal camera man, was able to keep the jumper in focus during the entire leap and to secure exclusive shots of this spectacular jump for life. These pictures were shown in Chicago Daily News-Universal releases in theatres all over the United States.

"Whew, I never knew I could have done anything like that," said Sandman after viewing the reel showing the performance in which he was the star, although his act was a bit impromptu. He turned pale, and cold sweat stood out on his forehead as he saw the pictorial evidence of his thrilling experience.

The pictures first show Sandman hesitating on the window-ledge with clouds of suffocating smoke rolling all around him. Then, all other avenues of escape being closed to him, he jumps to the net and safety.

Miss Margaret Paine, a stenographer, also made the same jump, but was not so fortunate as Sandman. She received some serious injuries to her skull. The Eyemo also caught exclusive pictures of her.

Due to the fact that the hand-held Eyemo can get into action and be actually photographing a scene before the larger professional camera can be set up, it is able to secure many valuable pictures which otherwise could not be captured at all.

Charles E. Ford, newsreel editor of the Chicago Daily News, states that every camera man on his staff takes an Eyemo home each night in order to be in readiness for any short-notice summons.

Free Directory of 16 mm. Film Sources to Be Distributed by Victor Animatograph Company

SINCE the advent of non-theatrical motion pictures and especially since the adoption of the 16 mm. film as the international non-theatrical standard, there has existed a dire need for a comprehensive listing of some kind containing all sources of 16 mm. films.

It has remained, however, for the Victor Animatograph Company of Davenport, Iowa, to attempt the first complete listing of 16 mm. sources a handy pocket-size edition, 5⅜"x 7⅝".

The Directory of 16 mm. film Sources is being published entirely at the expense of the Victor Animatograph Company. No charge has been made for the listings, and distribution is free to owners and prospective owners of 16mm. equipments. The information contained in the directory should prove strictly impartial as the Victor Organization does not produce or distribute films of any kind, and is not financially interested in any producing or distributing companies.

This is a Directory of Sources and not of subject titles. As each source, however, does not supply all the various types of subjects, a tabular style of listing has been employed which shows at a glance the kinds of films that are available thru any given source. Films are listed as being appropriate for School use, Church use, Professional use and for Entertainment purposes. The listing also shows whether films supplied by a given source are sold, rented or loaned free.

The Directory will be kept constantly up to date, and revised editions will be issued as often as necessary. Copies of the revised editions will be sent only to those requesting that their names be kept permanently on the Directory Mailing List.

Requests for the Directory should be addressed to: Film Directory Editor, Victor Animatograph Company, Davenport, Iowa.

According to statistics published by the British Board of Censors, 81 new feature films (3,000 feet or over) were censored in Great Britain during January, 1930. Of these 81 films, 49 were sound-synchronized and 32 were silent.

Oakland Firm Equips for Sound-on-Film

AFTER ten years of successful business in the industrial field in Northern California, The Commercial Film Laboratories of 3664 Broadway, Oakland, have entered a new field with the acquisition of this first Fearless Dramaphone Portable Sound Recorder designed by Mr. Ralph Fear, of the Fearless Camera Co.

In announcing this equipment they will enter a new era and make available sound-on-film for industrial, advertising and scenic subjects with an independently owned and controlled outfit. The equipment will be stationed in Oakland but will be sent anywhere on a rental basis.

The sound recording equipment has been installed in an attractive truck and every necessity for portable recording is included. The camera is a Bell & Howell and is completely rebuilt and silenced, equipped with Fearless speed movement, silent motor drive and 1000 foot magazines. All of the camera work, as well as the rest of the equipment, was done by the Fearless Camera Co. of Hollywood, and Ralph Fear's experience in this work guarantees that it is of the best.

The amplifier is placed directly in back of the front seat and the operator can monitor from the driver's compartment. Although all of the equipment can be operated over 100 feet from the truck without moving batteries; the entire outfit is portable and can be removed from the truck and carried in cases to any point desired.

A condenser microphone is used and was selected after a thorough and comprehensive search for the best in this type of apparatus.

The Commercial Film Laboratories have been operating a complete laboratory in the past but with this new equipment they have installed a sound printer as well as sound reproducer and picture reviewer for cutting. Their projection room is now also equipped for sound making. The plant is the most modern of its kind in Northern California. An automatic developing machine will be installed soon.

A complete stock of incandescent lights, spots, rifles, floods, overheads, strips side lamps are available at this plant as well as a small sound proof stage. A motor generator plant, four 24-inch searchlights, a rotary, spots and side arcs, form, in addition the balance of the finest lighting equipment that can be obtained in this territory.

With their past experience in the advertising field as a background and the fact that they can place this type of picture in 200 theatres, many of which they hold exclusive rights for, the Commercial Film Laboratories are in a position to offer an added service to the user of industrial films.

Seventy-five per cent of the theatrical trailers made in Northern California are made here and such circuits as Fox West Coast, Publix, R. K. O., T & D Jr. and Golden State have long been satisfied users of this type of work. Of course, trailers will now be made in sound.

Besides shooting in sound, they offer color for pictures or titles and will put in sound effects or synchronize a silent picture.

A cordial invitation is extended to anyone interested to call and inspect the plant and equipment. Producers or cameramen may make The Commercial plant their headquarters when in the North.

Amateur Movie Making

(Continued from Page 29)

pleasant, but inevitable task of re-moistening the humidifying pads every so often. The only precaution to be observed with this system is that there be perforated metal partitions over the pads, to prevent actual contact between the aluminum reels and the moistened pads. Incidentally, I imagine that care should be taken not to overdo the moistening!

An alternative method which Mr. Moir also recommends is to powder an ounce of tough, solid camphor for every four cans, and to place this powder in the cans, in envelopes made of blotting-paper and sealed with shellac. In order to keep the camphor from volatilizing—which it does very easily—the envelopes must be dampened with water. But since the camphor is not particularly soluble in water (no more than one part in 700) the envelopes can be kept quite moist without any danger of deterioration to the camphor.

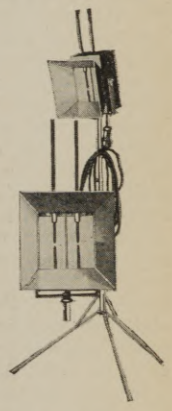
Little Sunny Twin



Only

$25

Complete



20,000 CANDLE POWER

of Even, Intense Light over a full 90°

The above picture, made on 16MM film with 1/32 second exposure at F:3.5, shows what one Little Sunny Twin will do. The lamp was 10 feet back from the subject and no other illumination was available.

Little Sunny Twin is the only lamp at its price that delivers a full 90° angle of evenly intense light sufficiently fast for F:3.5 movies. Operates on 110 volt A. C. or D. C. Semi-automatic. Draws only 15 amps. Try it 10 days. Money back instantly if you are not satisfied. Order now and get valuable book of instructions on "Interior Movie Lighting" free of charge.

Outfit includes lamp, six "pan" or "white flame" carbons, six-foot nickeled extension stand and long cord. State kind of carbons wanted. Extra carbons, $2.00 dozen.

LEONARD WESTPHALEN

428 Rush St., Dept. AC., Chicago, Ill.

Order Your Annual Now!

16 mm. Specialists

Cameras, projectors and accessories of all reputable makes for sale and rent. A 16 mm. film sale and rental library. Also 35 mm. portable cameras and projectors for sale or rent. Developing and Printing.

HOLLYWOOD MOVIE SUPPLY CO.

6058 Sunset Blvd. GRanite 0220

Order Your Annual Now!

ENERGIZE YOUR FILM!

Use Kleena-fylm Process

It cleans, rejuvenates, restores and maintains pliability in old film. A non-inflammable fluid easy to apply. Clearer projection. Guaranteed. At dealers, or postpaid, 85c

522 Fifth Ave. **KLEENA-FYLM CORP.** New York, N. Y.

Pacific Coast Distributors Craig Movie Supply Co. Western Pacific Bldg. Los Angeles, Calif.

THE MOTION PICTURE

An Address by Will H. Hays Given Over The National Broadcasting System During The Westinghouse Electric Company's "Salute to the Motion Picture Industry," March 4th.

STAND WITH me for a moment on a high mountain and see the long lines of men and women and children moving slowly forward. They come from everywhere. There are rosy cheeked girls from the farms, and their paler faced sisters from the cities whose feet ache from long hours of standing behind bargain counters. There are plow boys and sons of millionaires and boys with the sallow cheeks of the tenements. There are old women with hands reddened and coarsened by work and with eyes grown listless with long waiting. There are old men who hobble on crooked sticks and children with the flash of the sun's gold in their hair and the happy laughter of innocence in their voices. There are the schoolboy and the savant and the man of no learning at all. There are women and men of every race and of every tongue moving slowly forward, seeking something—seeking, searching, yearning, asking for a place to dream. All about them is the roar of cities, the confused jangling noises of life that is hurried, rushed, propelled forward at a breathless speed. Every minute of every hour of every day they come—millions and millions of them. And over and above them and in front of them, attracting them on, offering that which they desire, are billions of flickering shadows.

The motion picture! Who shall estimate its importance? Who shall attempt to say what it really means to the world? The motion picture within the thirty years of its existence has become a necessity. In thousands of homes throughout this country the question is not, "Shall we go to the movies?" It is, "To which movie shall we go?" The most popular after-dinner speech tonight is father saying, "Let's go to the movies."

The whole story of the motion picture is most fascinating. No story ever written for the screen is as dramatic as the story of the screen itself.

In one of our great cities recently there was a theatre strike. The theatres were closed. For two nights a million people milled about the streets deprived of entertainment. The city authorities sent word that the theatres would have to re-open. It was necessary for the well-being of that city that a place of amusement and relaxation be provided for its vast citizenry. And so the theatres were opened.

I have just returned from six weeks in Hollywood, where most of the pictures are made. That city is an international enterprise. Producers, actors, writers have their minds on the whole world when they make pictures. There is an earnest effort to consider the national feelings of other countries and to present the citizens of one country in such a sympathetic light that all other nations will be friendly with them. The producers are eager thus to aid in the world movement for peace.

They are as eager, too, of course, to make pictures which will please everyone at home. Obviously, it is difficult in a country where there is wide divergence of opinion upon religion, politics and art to please everyone with every picture. The industry is glad, however, to have expressions of opinion from all sources that it may more nearly please everyone and it will conscientiously analyse and, if possible, make use of every constructive suggestion and criticism.

Since the advent of talking pictures and by reason of the industry's own care of its standards and quality, interest in screen entertainment has grown enormously. Last year's attendance in this country alone increased by fifteen millions per week up to a total weekly attendance of one hundred and fifteen millions. This is three times as many Americans as were seeing pictures in 1922.

Dialogue and music have made possible countless plays and books which formerly had no screen value. Continually, too, our field broadens in useful services in education, industry, science and religion. The present is great,—but the future of motion pictures is, indeed, greater.

In this hour of Salute to Motion Pictures, the industry takes the opportunity to extend its felicitations to our many friends and to the Westinghouse Company, and to assure you that we are seeking to serve the great entertainment loving public with pictures always of the highest quality of amusement, artistry and beauty. And, in conclusion, I might observe to those of you who are listening that I propose now to go and see the nearest one.

Government Sells Prints

THE Office of Motion Pictures of the United States Department of Agriculture has just authorized the sale of prints of 131 of its educational pictures to the Government of Uruguay, South America. This order, the largest of the kind ever placed with the Department, will be filled by a private contractor, who is authorized to make prints from Department of Agriculture negatives. The Government does not sell prints on its own account.

The Department recently authorized the sale of prints of twenty of its films to the authorities of Soviet Russia. This order is the latest of several that have come to the Department from Russia in the past few years. Other foreign users of Uncle Sam's agricultural movies are Japan, Mexico, Peru, India and Germany.

Varges Uses Eyemo

ARIEL VARGES, cinematographer for Fox-Hearst Newsreel, who has spent many years in Asia and Europe and is probably one of the best known newsreel cameramen in the foreign field, is using with great success an automatic Bell & Howell Eyemo camera in his highly specialized work.

Mr. Varges does a considerable amount of work from airplanes and the lightness and portability of the Eyemo have been of great help to him. The advent of sound pictures has not injured the use of this camera, and Mr. Varges' recent best "shots" have been very successfully synchronized with sound.

France

PROCEEDINGS were instituted by the Melovox company, inventor of the Melovox sound film equipment, against the Etablissements Gerardot. According to contract, the latter was due to manufacture sound-film apparatus for the Melovox company, but not to turn out any other sound-film installations or handle any film business. Gerardot did not abide to the conditions of this contract and was sued by Melovox. A decision was taken recently by the Paris Tribunal of Commerce to the effect that Gerardot is not allowed to manufacture sound-equipments or handle any film business.

Grain Grading Methods Shown in New U. S. Movie

GRAIN GRADING," a new two-reel educational movie, released by the U. S. Department of Agriculture shows the need for grain inspection and the part that grading plays in the movement of grain in the United States and for shipment abroad. It is intended primarily for producers, dealers, and all other handlers of grain.

The new film takes the place of an old one-reel film, "Wheat Grading under Federal Supervision," which has been withdrawn from circulation after years of usefulness. The new film shows newer methods, more details, and the procedure.

The film is of special interest to farmers and handlers of grain in the West and Middle West and may be borrowed without charge, except for transportation, from the Office of Motion Pictures of the U. S. Department of Agriculture, Washington, D. C.

FROM SAILOR TO FEATURED PLAYER

A Few Facts About the Man Whose Photograph Appears on This Month's Cover

HOLLYWOOD produces some strange stories. Being the center of the motion picture industry, naturally it would; for from every quarter of the world men and women drift here with the hope that perhaps they may find a fortune in some branch of pictures.

Among the most recent of the young men who have started up the ladder to fame and fortune is the young man whose picture is found on the cover of this issue of the American Cinematographer. He is Duncan Renaldo, featured contract player with the Metro-Goldwyn-Mayer organization, who played the juvenile lead in that company's coming big picture, "Trader Horn," which Van Dyke directed down in the wilds of Africa, and which was photographed by an A. S. C. member, Clyde DaVinna.

Renaldo first saw the light of day in the city of Camden, N. J., on April 23, 1904. In the opinion of all residents of Philadelphia, he showed wisdom early in life by leaving Camden and going to France, but Renaldo says he had nothing to do with that as he was just a baby, and can't agree with the Philadelphians, anyway, as he thinks Camden is a fine city.

Anyway, Renaldo received his education in France. When the war broke out he was taken out of school and went home to live with his parents in a little town near the scene of fighting. Renaldo was too young to take part in the fighting, but he bears a half dozen shrapnel scars on his body just the same. You see, the Germans bombarded the town where he lived and one of the shells did its best to blot this young man out.

The war over, Renaldo, who had planned to be an artist, suddenly changed his mind and decided to be a sailor. So, he started out on a tramp steamer and visited practically all the big ports of the entire world, and very nearly stayed in the South Seas, so he says.

It was while on this trip that Renaldo picked up the idea that he would like to be an actor.

"I used to get in my quarters on the ship during my spare time", he says, "and orate with much gusto. I guess some of the sailors must have thought I was crazy. But I figured that practice was necessary."

Finally, Renaldo arrived in New York. There he quit the sea and found his way into a motion picture studio where he fortunately was successful in set designing. One day he met Hope Hampton who was just starting a picture. He told her he would like a chance in pictures. She gave him a part to play, the part of her brother, in "Fifty-Fifty".

Renaldo then caught on on the stage in New York and for three years played in various plays, meanwhile still working in the direction of motion pictures. He started writing stories in his spare time, and sold one to Colorart Pictures. This organization not only bought his story for a two-reeler, but gave him a job as actor and director in it. So he directed several two-reelers more for them and then came to the West Coast where for a time he continued with them.

Tom Terris gave him the lead in the "Naughty Duchess" and then Edward Everett Horton gave him a part in the stage play, "Her Carboard Lover". Renaldo was going up rapidly by this time and Metro-Goldwyn-Mayer gave him a big part in "The Bridge of San Luis Rey". He had not completed this role when M-G-M signed him to a long term contract, and his future in pictures was practically settled.

Director Van Dyke was looking for a man for the juvenile lead in "Trader Horn", he spotted Renaldo after scores of tests of other players had been made, and Renaldo went to Africa on the picture. There he was adopted into a tribe of savages and had a lot of narrow escapes such as rescuing Edwina Booth from a half dozen African Bisons that seemed intent upon wiping the female star from the African landscape.

Renaldo is a serious young man who looks ahead to the time when he will realize his greatest ambition, that of becoming a full-fledged director.

European Theatre Owners to Meet in June

NOTICE has just been received that the convention of the Federation Internationale des Directeurs de Cinematographes (the International Federation of Motion Picture Theatre Managers) will be held in Brussells, June 2-7, 1930. This convention is sponsored by the Belgian Cinematographic Association, and will be held under the patronage of the Belgian Government. Among the official hosts of the convention will be numbered such distinguished Belgians as M. Heyman, the Minister of Industry and Labor; M. Paul-Emile Janson, the Minister of Justice; M. Beals, the Minister of the Interior, and M. Forthomme, the Minister of Postal Communications. The Belgian Cinematographic Association is headed by M. Jules Jourdain, who has announced that delegations to the convention are already being organized by similar organizations in France, England, Germany, Italy, and various other European countries.

At this convention commissions are to be established to study and report upon the various technical and economic problems confronting the European Film Industry, from an international viewpoint, and, if possible, make practical recommendations for their solution. Among the commissions are to be those for Organization of an International Federation; for study of the Educational Cinema; for the study of the problems of Exploitation, Booking, and Production; for the study of special taxes and imposts on exhibition; for the study of the rights of authors, both of films and music; for the study of sound and talking films—including such technical aspects as the study of the various systems themselves, and their standardization, and the economic problems they introduce in booking and exhibition; a further commission to survey and study purely technical questions; another to study and, if possible, standardize the legal situations and national legislation regarding the cinema, including contractural forms and censorship; and a final commission for the protection of professional exhibition.

Roland West to Make "Whispers"

MONTHS of speculation in the motion picture industry over Roland West's plan for the future ended when the producer-director announced that he will start immediately preparing for another United Artists all-dialogue feature—"Whispers," a comedy drama to be adapted from a New York stage play.

West, after scoring one of the greatest talking picture successes with his all-star production of "Alibi," photographed by Ray June, A. S. C., in which Chester Morris soared to overnight fame, considered scores of stories and plays before deciding on his second audible fature. West so far has made no definite selections for the cast, but in all probability "Whispers" will be an all-star production like "Alibi," "The Rat," and other of his outstanding pictures.

West denied that he plans to make "The Rat" into a talking picture, with Chester Morris starred. "It was a big success as a silent picture, but mysteries have been overdone," he said. " 'The Rat' positively will not be made into a dialogue feature."

Pierre Colombier, Rene Pujol and Maurice Yvain are now collaborating in the Pathe-Natan studios at Joinville in the production of a film entitled "Radieux-Concert." It is interesting to note that besides an English, German and Spanish version, this film will have two French versions, one of these being in black and white, and the second in color.

German Kinoton sets for medium and small cinemas are available at a price from 8,500 marks, states a German trade paper (see Bureau report "German Sound-Film Notes," of February 15, 1930).

Now on the press . . .

The

CINEMATOGRAPHIC ANNUAL

The greatest technical book ever offered to the motion picture world —a book you cannot afford to be without—a book equally valuable to professional or amateur cinematographers, sound technicians, directors, film editors, projectionists, theatre owners, manufacturers, laboratory workers, art directors—

If you have not ordered your copy, do so now.

Price $5.00 per copy

AMERICAN SOCIETY OF CINEMATOGRAPHERS,
1222 Guaranty Building, Hollywood, California.

Gentlemen: Enclosed please find check (or money order) for Five Dollars ($5.00) for which please send me prepaid, one copy of your Cinematographic Annual as soon as it is off the press, which date will be April, 1930.

Name..... *Address*.....

City..... *State*.....

Licht, Achtung, Kurbel—Halt!

(Continued from Page 11)

Film of German and American make is used entirely. Agfa and Kodak being preferred. Super-speed and pan film are used for the most part. A special film made for night work and an aerial film, both made by Zeiss Ikon, find occasional use when the need arises.

The negatives are developed in Pyro. Each laboratory has its own pet formula, which is kept a deep secret. Glycin and M. Q. are used very little. Borax is not in favor because of its high price and poor keeping qualities. Processing is generally by rack and tank. Only a few developing machines are in use, and they are not in favor.

The German Laboratory is by no means a good example. The rooms are small, badly kept, and poorly ventilated. Safelights are of the same remarkable variety found in the studio darkrooms.

The workers in the laboratories are mostly trained photographers, no unskilled laborers are employed. The quality of the film turned out is uniformly good. Laboratories are always located near the studios, making it very convenient for the cameraman for rush work.

A few words should be said about sound production. Very little was done until a few months ago. Everyone was watching America to see the outcome of the first production. The opinions of everyone in the industry were different, and still remain so. Nobody believed in the sound film as being here to stay. Then Ufa started with the construction of a sound studio, and the others followed suit, building new studios or reconstructing the old ones. At the present time sound stages are available in every studio. The Ufa studio was built in four and one-half months, and is now the best equipped for sound and silent production.

In conclusion, it may be said that in contrast to the American industry, the greatest factor is cost. Due to economic conditions, money is not available for salaries or equipment on the American scale. Partly as a result of this, the technical staff is better trained than here. The German cameraman can and does produce excellent results with much less equipment than his American brother. Skill, rather than cost, is the greatest element in film "made in Germany."

Sound by W. E. for League of Nations International Institute

THE World's Centre of the International Education Cinematographic Institute for the League of Nations at the Villa Torlonia, Rome, has been equipped with Western Electric talking apparatus.

The installation is in a specially constructed and beautifully designed auditorium at the Villa Torlonia which is situated just outside Rome in spacious grounds adjoining the home of Duce Mussolini.

The installation was made under the direction of Engineer Moreau of Western Electric's staff at Rome.

Tobis-Klangfilm Reduces

TOBIS-KLANGFILM offers sound sets in France (1930 model) at from 140,000 to 195,000 francs for a double projection post. The price varies according to the size of the hall to be wired. Previous highest price was 276,000 francs. It is probable that the modification is due to the bringing on to the market of the Ideal Sonore Gaumont set at 150,000 francs for a double post. It is not known how many, or whether any Klangfilm-Tobis sets at all have been sold in France.

New Television Process

A NEW television process is promised from Paris. A new apparatus said to be much in advance of others, especially the American type, has been perfected and patented by a French engineer, namely M. Bernard of the French Radio Corporation. M. Bernard has already made application to the Home Department to create four broadcasting television stations. The basis of the proposed scheme is publicity. Pictures would be broadcast to receivers without charge, but the company would be authorized to project advertising matter.

You Can "Double In"

Outdoor Shots on Indoor Sound Stages

behind any intimate Dialogue shot by using a

DUNNING PROCESS PLATE

You shoot today—
Screen tomorrow

Dunning Process Company
932 No. La Brea Avenue
Phone GLadstone 3959 for demonstration

HAL MOHR

Will Sell His

COMPLETE MITCHELL CAMERA EQUIPMENT

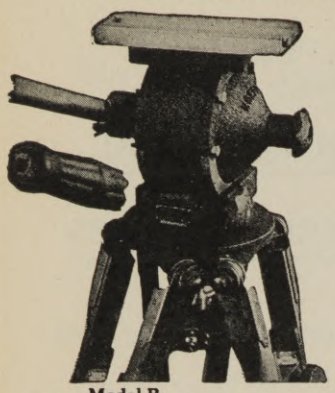
You Know What This Is

If you are interested in buying this camera and equipment, get in touch with me through the office of the

AMERICAN SOCIETY OF CINEMATOGRAPHERS.

The Czecho-Slovakian film, *The Honour of an Officer*, has just been shown at Prague. This film shows the struggle of the Czecho-Slovak legions against Bolshevism. It is said to be remarkably directed, and to have obtained a remarkable success.

TRUEBALL TRIPOD HEADS

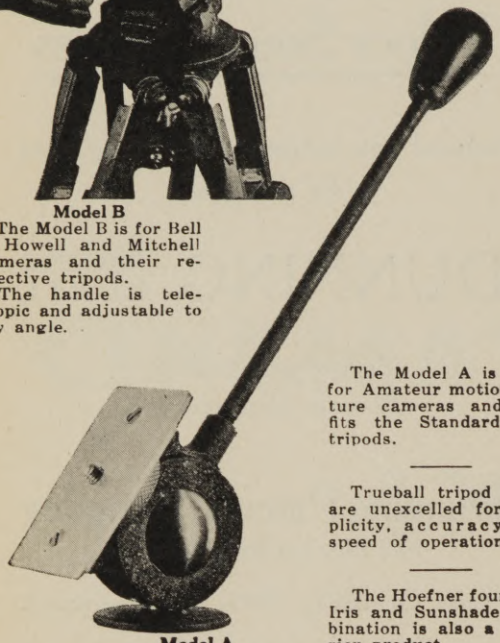


For follow-up shots are known for their smoothness of operation, equal tension on all movements and being unaffected by temperature.

Model B

The Model B is for Bell & Howell and Mitchell Cameras and their respective tripods.

The handle is telescopic and adjustable to any angle.



The Model A is made for Amateur motion picture cameras and also fits the Standard Still tripods.

Trueball tripod heads are unexcelled for simplicity, accuracy and speed of operation.

The Hoefner four-inch Iris and Sunshade combination is also a superior product.

Model A

FRED HOEFNER

5319 SANTA MONICA BOULEVARD

GLadstone 0243 LOS ANGELES, CALIF.

AMERICAN CINEMATOGRAPHER,
1222 Guaranty Bldg.,
Hollywood, California.

Gentlemen: Please find enclosed three dollars (Foreign rates additional), for one year's subscription to the American Cinematographer, to begin with the issue of....., 19.....

Name.....

Street No.....

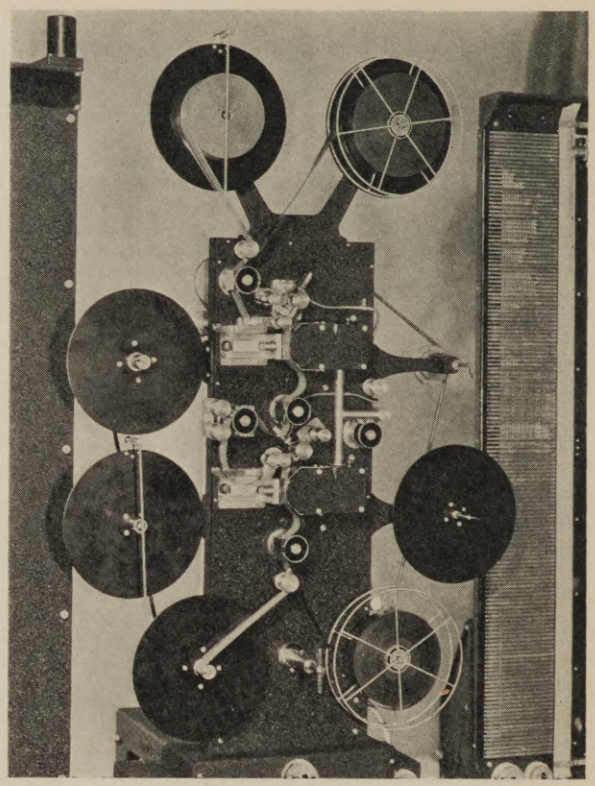
Town..... State.....

Clubbing Rates

	U. S.	Canada	Foreign
American Cinematographer	$3.00	$3.50	$4.00
In Club with:			
Camera Craft	3.90	4.65	5.40
Photo-Era	4.75	5.00	6.40
The Camera	3.90	4.40	5.40

Please make all remittances payable to
THE AMERICAN CINEMATOGRAPHER

Depue's New Printer



HOLLYWOOD film laboratory circles were given a peep last week at Oscar B. Depue's newest mechanical device, a printer that simultaneously prints sound and picture. Mr. Depue set his printer up at The Centaur Laboratories of Wm. Horsley and daily displayed this ingenious machine to the officials of the picture world. The above picture gives a fair idea of how it looks.

French Police Use Talkies

FOLLOWING American experiments in the use of talking pictures for recording crime confessions in America, it is announced that the Paris Surete Generale is to adopt the use of "talkies"in crime detection. Mr. Chiappe, the Prefect of Police, is to have a sound film recording equipment fitted at Police headquarters, where suspected persons undergo their examination at the hands of the examining magistrate. Every question and answer will be recorded, and every gesture of the examining magistrate and the suspect will be photographed. It is thought that the use of "talkies" in this manner will not only aid crime detection, but will convince the public that suspected persons are not unfairly treated.

Paris

A PARIS "talkie" cinema aimed to supply the needs of English and American patrons is the purpose of the Alma Palace, the new theatre opened by Louis Nalpas. The apparatus installed is Nalpas' own, the L. N. A. The first night audience, which was mainly French, was not enthusiastic about the language aspect of the matter, and clamoured for "talkies" in French. The press was severe in its criticism of sound-reproduction and projection, advising the directors of the new cinema to change as soon as possible their present inferior sound-equipment. The L. N. A. set is known aboard as Filmophone.

The famous German director, E. A. Dupont, has been signed as production manager of the *Emelka Co.*, of Munich.

Associated Sound Pictures, of England, have announced that they will soon make a series of pictures in sound and color in India.

Sound Personnel and Organization

(Continued from Page 20)

in Fig. 2 as merely a single line, is of paramount importance in those companies which release principally on disc and have their own pressing plants. These would really require another organization chart for complete treatment, which need not be included, however, in a general paper.

Too Many Applicants

Before closing the subject, I should like to invite attention to an economic phase of the sound problem which is of foremost interest to many people outside of the industry.

Any sound executive's mail reflects a great aspiration on the part of many radio and electrical technicians to get into the movies. This desire arises partly from the glamour of the business, partly from the publicity with which it is so richly endowed, and partly from the relatively high salaries which successful sound men command. Furthermore, there was an acute scarcity of sound men in Hollywood during the transition from silent to sound pictures, and the news of this El Dorado is still reverberating among the ambitious and the dissatisfied—unfortunately with a time lag of 1-2 years. As is usual in such cases, the supply has more than caught up with the demand, even during peaks of production. During periods of only moderate activity, as at the present writing (March, 1930), there are considerable numbers of qualified sound engineers out of work in the Hollywood district. The number of jobs is at best very limited. *Variety*, in its survey of motion picture studio employment, reported in its issue of January 8, 1930, gave the following figures for sound personnel in the Western Studios:

Company	No. Employees in Sound	Company	No. Employees in Sound
Warners	193	Columbia	22
M-G-M	147	Tiffany	15
Paramount	105	Tec-Art	12
Universal	100	Hal Roach	10
Fox	75	James Cruze	9
United Artists	44	Mack Sennett	4
Metropolitan	41	Educational	4
R-K-O	32	Larry Darmour	4
Pathe	32	Miscellaneous	71
First National	29	Total	949

While in some cases these figures have been increased since the tabulation, it is clear that there are only about 1000 sound jobs in Hollywood. This is surely nothing to write home about, especially as Los Angeles affords relatively few jobs in allied fields to the man waiting for a moving picture sound connection. It may be conceded that many of the men who are now knocking at the gates are just as good as those who are inside, but the ins are in, and the mortality among them is not sufficiently high to justify extravagant hopes on the part of the waiters in ante-rooms. Furthermore, the introduction of student engineering courses in some of the studios, the association of some of the producers with the electrical manufacturing companies, and the prior rights of eligible men in other departments of moving picture companies, further decrease the opportunities for immediate entrance for men whose experience has been confined to other fields. In short, sound must echo the warnings issued from time to time in the older branches of the industry against blind ventures in the direction of Hollywood, where neither the climate nor the scenery nor the presence of the national heroes and heroines can compensate for the lack of a personal income.

Eastman Kodak Stores Open Hollywood Branch

FOR THE convenience of the motion picture trade and the residents of Hollywood, the Eastman Kodak Stores have opened a Hollywood branch. The new branch is located in the Eastman Kodak Company's new Research Laboratory building at 6706 Santa Monica Boulevard.

This branch will carry a full line of filters, kodaks, cine-kodaks, roll film and general photographic supplies.

Special attention will be paid to processing of 16 mm. film, and this film may be left there for processing. Also Kodakolor film may be left for processing at the new plant which will care for all the 16 mm. work in Southern California.

Have you ordered the Cinematographic Annual?

GOERZ

CINE LENSES

Goerz Cine Lenses are being used all over the World because they are of

Superior Quality

We manufacture in our New York factory the

Kino—Hypar F. 2.7 and F. 3

in focal lengths from 1-inch to 4-inch

We also have an imported, superspeed series

Cinegor F. 2 and F. 2.5

in focal lengths from 1⅜-inch to 4-inch and the telephoto series

Telestar F. 4.5

in focal lengths from 4½-inch to 13½ inch for long distance shots and close-ups

We make all kinds of trick devices, precision focusing mounts, focusing microscopes and special camera fittings.

We undertake the development of your own ideas along optical lines. Write us. A new catalogue, listing the complete line of Goerz Lenses and accessories, will be mailed on request.

C. P. Goerz American Optical Co.

317 E. 34th St. New York, N. Y.

AMATEURS

Keep Step with the Professionals by Reading The Technical Cinematic Magazine of the Motion Picture Industry.

THE AMERICAN CINEMATOGRAPHER

Published in Hollywood by the American Society of Cinematographers, the leading professional cameramen of the world.

You cannot afford to be without it.
For Amateurs—Service department, special technical articles by the world's greatest authorities on cinematographic science.

[Fill in and Mail Today]

American Cinematographer,
1222 Guaranty Building,
Hollywood, Calif.

Gentlemen: Please find enclosed three dollars ($4.00 for foreign rate) for one year's subscription to the AMERICAN CINEMATOGRAPHER, to begin with the issue of_____1930.

Name_____

Address_____

Town_____ State_____

For Sale . . .

Complete Mitchell camera, high speed and silenced for sound. This is one of the most fully equipped cameras in use. Complete equipment represents an investment of $8,000.00.

Will sell only entire equipment.

If you are interested in a really high class outfit, get in touch with me through the office of the American Society of Cinematographers.

HAL MOHR

THIS IS THE OUTFIT THAT HAS PHOTOGRAPHED "NOAH'S ARK," "BROADWAY," AND OTHER BIG PICTURES

Have you ordered the Cinematographic Annual?

Some Folks Read
FICTION
Some Folks Read
FACT
THE LATTER READ
HOLLYWOOD
the authentic motion picture magazine devoted to the interests of the cinema fans —written, edited and published where the films are made.
On sale at all newsstands the 15th of every month

Order Your Annual Now!

Mitchell and Bell & Howell Cameras

J. R. Lockwood

Camera rentals and sales

All Mitchell cameras supplied with two 1000 ft. magazines if desired at regular camera rental

1108 Lillian Way

Hollywood, California

Phone GRanite 3177

Cable Address "Lockcamera" Hollywood

Questions and Answers

Question: I have a 35 mm. print, which I prize very highly, and to which the negative is lost. Is there any way I can have new copies made of it?—R. M. C., Boston.

Answer: Most of the laboratories serving the professional trade can make duplicate negatives and prints for you. Of course, the new negatives and positives will have in them all the signs of wear and tear—such as scratches, etc., that the original print had. The Eastman Company has devised a special film for this purpose, known as *Duplicating Film*. This has a special emulsion which has in it a yellow dyestuff which acts as a filter, and also prevents 'irradiation', or scattering of the light, which greatly decreases the latitude of an emulsion. This duplicating film is approximately twenty times slower than normal, so the grain is very fine. A great deal of control can be exercised in the printing process by the use of filters, yellow ones increasing the contrast, and violet ones decreasing it. With careful manipulation, duplicating film will give results equal to those of normal printing, and, at times, it is claimed, even surpass them.

Question: Some of my older films are getting brittle. What causes this, and how can it be remedied?—G. H. D., Seattle.

Answer: Improperly dried films become brittle because of the absence of the hygroscopic moisture which the gelatine should carry. This normal content should be about 15%; when it falls below about 10%, the film loses its flexibility. As a preventive, open your reels every now and then, rewind them, even if you don't show them, and above all, don't store them in a hot, dry place. As a cure, the best treatment is probably Teitel's "New-Life" process.

Question: Why are the pictures I make with a color filter cut off around the edges, or darkened at the corners?—N. H. B., Houston, Tex.

Answer: Probably because the filter is not mounted correctly on your lens; it may be too far out, or the metal barrel in which it is mounted may project too far forward, or be of too small a diameter. The sunshade may also be too small, and be the offender itself.

Question: I want to make a medium sized screen (say 3 or 4 feet long), that will be washable. Can you help me on it?

Answer: Stiff wallboard, such as 'beaverboard', is an excellent base. Paint this with such a paint as the well-known "Barrelled Sunlight." This paint is washable, and gives a good reflecting surface. Another suggestion might be to try stretching some smooth, washable wall fabric like *Sanitas* or *Meritas* on the board.

Question: How can I get some night effects with my 35 mm. Institute Standard camera by daylight?—C. Y. T., Chicago.

Answer: By using specially hypersensitized panchromatic film and a deep red filter like the Wratten No. 70. This will, of course, require an extra-fast lens, working at at least F:2. The film is available from the Eastman Co.; the hypersensitivity lasts about a month.

Question: How can I get fade-out and fade-in effects when I make my titles by photographing a white card with black letters direct on positive stock?—I. J. N., Philadelphia.

Answer: Make your title in the usual manner, but allow sufficient footage before it for your fade-in. Then take your camera back into a darkroom and rewind the film to your previously-marked starting-point. After that you can make your fades: use a plain white card, and make your fade-in by fading *out*, and your fade-out by fading *in*. To get just the right effect, it is just as well to let your fades overlap the title itself slightly. If you do your own developing, do not use a 'maximum-contrast' developer, as that tends to produce an effect similar to halation. Instead use a developer like the Eastman "D-11" formula.

Order Your Annual Now!

Your Makeup Problems



By MAX FACTOR
[*Internationally Known Authority on Makeup*]

Dear Mr. Factor:

I have just been called on to play the role of a Nubian slave which means that I will wear practically no clothing whatever. The role will last three weeks and during that period I want somebody make-up which will wash off easily each day. What would you suggest?

M. M. B. Detroit, Mich.

Answer:

Dark brown (17) Liquid body make-up will answer your problem. It will wash easily being removed daily with soap and water. It can be applied to the face as easily as the body and the features of the face can be accentuated as usual with black eye pencil, dark eyeshadow for the lids and a dark lip rouge.

Dear Mr. Factor:

From all that I can learn I am of the type of Joan Crawford. Will you give me the best harmony color make-up for my type. If there is any variation I will write you again after making a test along the lines you suggest.

S. L. W., Lexington, Ky.

Answer:

Joan Crawford's color harmony make-up is as follows: she uses a FLESH POWDER FOUNDATION, NATURAL FACE POWDER, RASPBERRY ROUGE, MEDIUM LIPSTICK, BROWN EYESHADOW, BLACK MASQUE, BLACK EYEBROW PENCIL, RACHELLE LIQUID WHITENER and BRILLOX for the hair. For evening she uses BRUNETTE FACE POWDER and the same RASPBERRY ROGUE as in the day time but more of it.

Dear Mr. Factor:

I am a blonde with creamy skin, blue eyes and am in nature animated and full of pep so to speak. Will you give me my proper color harmony society make-up. I have a girl friend who has absolutely the same coloring so you will be doing a double service by letting me hear from you very soon.

A. C., Duluth, Minn.

Answer:

From what you say you are of the same color harmony type as Marion Davies. Try her society make-up and let me hear from you how it turns out. Miss Davies uses a FLESH POWDER FOUNDATION, RACHELLE FACE POWDER, DAY ROUGE, LIGHT LIPSTICK, GRAY EYESHADOW, BROWN MASQUE, BROWN EYEBROW PENCIL, and RACHELLE LIQUID WHITENER.

W. E. in Chile

CHILE is the latest country to see, hear and succumb to talking pictures reproduced over the Western Electric Sound System.

The first Chilean house to be equipped with Western Electric was the Teatro Carrera, Santiago, which showed "The Broadway Melody" for its first talking attraction on March 6 and played two performances daily to enthusiastic capacity houses.

Western Electric has received contracts to install the equipment in ten more houses in Chile.

Zeiss Tessar

No camera can be better than its lens. All Carl Zeiss Tessars ensure perfect definition and brilliancy, even at full aperture, and results will not be impaired by flare. These are only a few reasons why Carl Zeiss Tessar Lenses have universal endorsement

CARL ZEISS JENA

CARL ZEISS, INCORPORATED
435 Fifth Ave., New York ✣ 728 So. Hill St., Los Angeles

SOUND FILTERS
Scheibe's "Movie Effect" FILTERS
SINCE 1916
have proven sound for many years, producing Moonlight and Night Effects in Daytime-Fog Scenes-Diffused Focus and many other effects.
MY FILTERS ARE USED BY ALL HOLLYWOOD STUDIOS
ENDORSED BY···AMERICAN SOCIETY OF CINEMATOGRAPHERS
Ask you dealer, or write to
GEORGE H. SCHEIBE
PHOTO-FILTER SPECIALIST
1927-W-78TH ST. LOS ANGELES, CAL.

• INDEX TO ADVERTISERS •

Air Horse Co.	45
Bass Camera Co.	31
Bell & Howell Co.	21
Brulatour, Inc., J. E.	19
Cinematographic Annual	38
Commercial Film Laboratories	4
Composite Laboratories	27
Davidge, Roy	34
Drem Products Corp.	30
Dunning Process Co.	39
DuPont Pathe Film Mfg. Co.	Inside Front Cover
Dyer, Elmer C.	46
Eastman Kodak Co.	Inside Back Cover
Factor, Max	6
Fearless Camera Company	5
General Electric Corp.	1
Goerz American Optical Co., C. P.	41
Hoefner, Fred.	40
Hollywood Magazine	42
Hollywood Movie Supply Co.	35
Holmes Laboratory, Burton	26
Jackman, Dr. G. Floyd	46
Kleena-Fylm Corp.	35
Lockwood, J. R.	42
Mitchell Camera Corp.	Back Cover and 45
Mole-Richardson, Inc.	2
Multicolor Films, Inc.	24
National Carbon Co.	7
National Film Publicity Corp.	28
Perry, Harry	46
Priester, Harvey W.	46
Ruby Gold Dredging Co., Ltd.	23
Scheibe, George H.	43
Smith & Aller, Inc.	Inside Front Cover
Superior Engraving Co.	26
Tanar Corporation	25
Van Rossem, W. J.	46
Zeiss, Inc., Carl	31 and 43

Kindly Mention The American Cinematographer When Writing to Advertisers

Czecho Slovakia

WIRED cinemas in Czecho-Slovakia and Vienna have increased their admission prices by from 30 to 50 per cent. Cinemas charging from 1 to 2.50 shillings in the silent-film days now charge from 1.30 to 4 shillings. It is pointed out in Germany that the same increase might be observed in other foreign countries, and since it has met with success everywhere, Germany, it is stated, should follow this example. This would require but one concern to increase its prices for others to follow suit. But, unhappily, the directors lack confidence and often even lower their prices when business is good instead of increasing them.

Professional Amateurs

(Continued from Page 33)

us to make many novel and interesting scenes and trick effects.

"The only thing I really miss is the fact that I can't have dialogue and sound effects with my personal 16 mm. pictures the same as I have with the professional ones I make at the studio. But I am sure that, before long, this feature will be forthcoming.

"I take my 16 mm. camera wherever I go now, especially on location trips. In that way I'm getting together some very interesting subjects. The many processing stations that the film companies have established all over this country and abroad will certainly be a big help to us cameramen when we go on distant locations. We may never know where our work is going to take us next, but it's a comfort to know that no matter where that is, we'll not be far from a processing station for our 16 mm. films.

"Since becoming a 16 mm. amateur I've found so many of my associates, and the directors and stars as well, either users or prospective users of 16 mm. outfits, that I'm sure that before long they'll all have 16 mm outfits. And so, after seeing the results that they get, and knowing the results that I've gotten, I'm glad to say—'Yes, I'm an amateur movie-maker—and proud of it!' "

Super-Film Camera

(Continued from Page 14)

"In developing this magazine cost was not taken into consideration, as we felt that the loss of one roll of film caused by scratches would pay for the additional cost of this magazine over the other type magazines now on the market.

"This magazine can be supplied for Fearless, Bell & Howell, or Mitchell cameras, in either 35, 65, or 70 mm.

The perfection of design, the materials used in fabrication and the extreme pains taken to insure precision machine work in their construction makes the Fearless Magazine buckle proof, dust proof, and insures against trouble.

"The following patents have been applied for on the design, etc.:

"1. Magazine with removeable throat and free opening light trap.

"2. 35 mm. magazine with broad base for wide film cameras.

"3. Wide film magazine with recessed rollers for using two different size films in same magazine."

France

FRENCH exhibitors are now required by an edict of the Paris Chief of Police to supply immediately details of all "talkie" apparatus installed in their theatres. The regulation which is being enforced and which has been circularized through the Syndicat Francais des Theatres Cinematographiques, demands that as soon as apparatus is installed the Prefet de Police must be supplied with:

1. A plan of the new installation.
2. A plan of alterations, etc., in the operating cabin, if any have been made.
3. Alterations in and adjustments to all electric lighting and power supplies.

Film production in Esthonia only came into existence two or three years ago. The oldest production firm of the country is the "Esthonia-Film," which was created in 1927 by two brothers. J. and P. Parkas, professional photographers, in Reval. This firm possesses its own studio and one cinema in Reval. The first picture released by Esthonia-Film was a non-theatrical film showing beautiful landscapes of the country and scenes of its industrial and agricultural life. Several other production firms were instituted since 1927, but they only existed a very short time. Their films mostly show episodes from Esthonian peasants' life. The cinema-going public of Reval prefers American and German films. French productions are scarcely popular.

The Establissements L. Robouts, agents for the Ernemann projector, state that 73 wired cinemas in France and Algeria have equipped their projecing rooms with Ernemann projectors, which are claimed to be particularly appreciated for sound-installations.

Have you ordered the Cinematographic Annual?

Ride an "Air Horse" for Health!

All of the benefits of horseback riding without the expense.

●

The "Air Horse" is always ready to carry you to health, and never needs attention. Just step on it, raise up on your toes, drop to your heels and you get the motion and the exercise you would get on a horse.

●

Removes the fatty, flabby tissue which lack of exercise puts on you, and replaces fat with shapeliness. A boon to women who face the trying problem of staying shapely and healthy.

●

Price

$37.50

F. O. B. Los Angeles

●

The "Air Horse" is built of rubber, steel and fabric. It cannot get out of order. Just inflate with air once every four months.



June Clyde, R-K-O, featured player in "The Cuckoos," taking her morning exercise on an "Air Horse."

●

Recommended as health builder by leading physicians of Southern California.

●

At your request we will gladly show you what these prominent doctors have to say about the Air Horse as a strengthener of abdominal, back and leg muscles and as a cure for dread constipation.

●

Banishes that tired feeling. Exercises every muscle in the body. Increases the circulation. Sends the blood tingling through your veins, and gives you health, pep, vigor and a clear brain.

●

Price

$37.50

F. O. B. Los Angeles

●

Let us give you a demonstration in your own home. A phone call will bring a demonstrator the same day.

ONE TRIAL WILL CONVINCE YOU

If you wish to settle the problem of obesity without the risk of dieting, order an "Air Horse" today, or send for details

MAIL TODAY

THE AIR HORSE CO.,
704 So. Spring St.,
Los Angeles, California.

Enclosed is check for $37.50 for which ship me one "Air Horse."

Name.....

Address.....

The Air Horse Co.

704 South Spring Street,
LOS ANGELES, CALIFORNIA.
Telephone: VANDIKE 4877

MAIL TODAY

THE AIR HORSE CO.,
704 So. Spring St.,
Los Angeles, California.

Please send "Air Horse" details or demonstrator, without obligating me.

Name.....

Address.....

ELMER G. DYER
AKELEY SPECIALIST
Aerial Photography Since 1918
Phone HE. 8116

WALTER J. VAN ROSSEM
Photographic Laboratory
and
Camera Rental Service
6049 Hollywood Boulevard Phone HOllywood 0725
HOLLYWOOD, CALIFORNIA

Phone GL. 7507 Hours 9 to 5
Also by Appointment
Dr. G. Floyd Jackman
DENTIST
706 Hollywood First National Building
Hollywood Blvd. at Highland Ave.

HARRY PERRY, A.S.C.
Available for
SOUND-CINEMATOGRAPHY
FINEST SOUND EQUIPMENT
OXford 1908 *HEmpstead 1128*

HARVEY Wm. PRIESTER
Insurance Experting
CAMERA INSURANCE A SPECIALTY
510 Guaranty Building
6331 Hollywood Blvd., Hollywood, California
Tel: GLadstone 4811

MITCHELL CAMERA
FOR RENT OR SALE
Speed Movement—Fully Equipped—5 Matched Pan Tachar f.2.3 Lenses—4-3-2-40 and 35—two 1,000-ft. and four 400-ft. Magazines—Friction Head for Panning—Gear Box for Different Speeds—Baby Tripod and High Hat—Cases for all with Yale locks.
Glenn R. Kershner
c/o A. S. C.

WANTED—Position: Young man 23 years, intelligent, steady and ambitious, earnestly desires opportunity to learn cinematography or allied profession that will lead to same. Hours work or salary no object. Go anywhere, any time. Address Robert Feagans, 312 Mason Street, San Bernardino, Calif.

CLASSIFIED ADVERTISING

Rates: Four cents a word. Minimum charge, one dollar per insertion.

WANTED—MOTION PICTURE CAMERAS

WANTED—For cash, DeBrie, Pathe, Bell & Howell Standard cameras. Send full description. Bass Camera Company, 179 West Madison Street, Chicago.

WANTED—Mitchell or Bell & Howell cameras, lenses and equipment. Write giving complete inventory and price. J. R. Lockwood, 1108 N. Lillian Way, Hollywood.

WANTED—To Buy: One Universal Camera, with dissolving shutter; 200 ft. magazine. Phone OL 3515 or GL 1295. Walt Disney Studio, 2719 Hyperion.

FOR SALE—CAMERAS

FOR SALE—2 complete Mitchell High Speed Outfits, $3500.00 each. Special price for purchaser of both. Write or phone Editor of CINEMATOGRAPHER.

FOR SALE—Bell & Howell camera with complete equipment, $950.00. J. R. Lockwood, 1108 N. Lillian Way, Hollywood, GRanite 3177.

FOR SALE OR RENT—First Class Akeley Outfit complete. Phone GR-4274, or write Dan B. Clark, A. S. C. office.

FOR SALE—Bell & Howell Camera, 170 degree; three Lenses F 2.5, Iris, Mitchell tripod, four magazines, steel cases. Park J. Ries, 1540 N. Cahuenga Ave., GRanite 1185.

FOR SALE—Thalhammer Iris, 40mm, 50mm, 75mm F 3.5, Lenses in B. & H. mounts. Park J. Ries, 1540 N. Cahuenga Ave., GRanite 1185.

FOR SALE—One 5x7 Press Graflex Camera, with 8½-inch F4.5, Zeiss Tessar lens; one 5x7 cut film magazine; one roll holder; one focusing back; and sole leather carrying case. Price, $95.00. All in new condition. Fred A. Parrish, 2526 West Colorado Ave., Colorado Springs, Colo.

FOR SALE—Akeley Camera, 2, 6, 12 inch lenses and finders to match, four magazines, carrying cases, Mitchell quick-release legs. Camera has been overhauled and is in good mechanical condition. Price $700.00. E. G. Dyer, A. S. C., or 951 No. Spaulding Ave., Hollywood, California.

FOR SALE OR RENT—Complete Mitchell Camera, latest equipment. Reasonable. Harry Perry. Phone OX. 1908 or GR. 4274.

FOR SALE—DeVry Camera for standard film. Absolutely new. Special price $110.00. Regular price, $150.00. Marshutz Optical Co., 518 W. Sixth St., Phone FAber 6095.

FOR SALE—MISCELLANEOUS

FOR SALE—Two slightly used Mitchell Matt boxes at $40.00 per set. Call Chas. Glouner at Universal Studios. HEmpstead 3131.

FOR RENT—CAMERAS

FOR RENT—Two Bell & Howell cameras, Mitchell tripods, large finders, all F/2.3 lenses, 1000 ft. magazines for B. & H. Also Cinemotor and friction head for Akeley work. Frank Cotner, 6273 Selma Ave., HOlly 5046.

FOR RENT—Eight Bell & Howell cameras, fast lenses, large finders, Mitchell tripods. Park J. Ries, 1540 N. Cahuenga Ave. GR-1185.

FOR RENT—Akeley camera outfit, Mitchell tripod, 6 magazines, equipped up to 6 inch lenses. Park J. Ries, 1540 N. Cahuenga Ave. GRanite 1185.

FOR RENT—Two Bell & Howell Cameras, equipped with Speed movements for slow motion or sound work, fast lenses, large finders Mitchell tripods, 1000 ft. magazines. Park J. Ries, 1540 N. Cahuenga Ave. GRanite 1185.

FOR RENT—3 Mitchell speed cameras equipped for sound work. All Mitchell cameras supplied with two 1000 ft. magazines if desired at regular camera rental rates. J. R. Lockwood, 1108 N. Lillian Way. GRanite 3177.

FOR RENT—Mitchell Speed Camera, equipped for Sound. Phone Don B. Keyes, HE-1841.

FOR RENT—2 Mitchell high speed cameras with latest 40, 50 and 75 mm. Pan-Astro lenses. 1000 ft. magazines; loose head, tripod. Pliny Horne, 1318 N. Stanley, HO 7682 or GL 2791.

FOR RENT—MISCELLANEOUS

FOR RENT—Two Bell & Howell Cinemotors, with counters and batteries. Park J. Ries, 1540 N. Cahuenga Ave. GR-1185.

FOR RENT—Mitchell Gear Box with crank and shaft. Mitchell Motor; 1000 ft. magazines. Phone Donald B. Keyes, HE-1841.

FOR RENT—Mitchell friction tilthead with Bell & Howell adapter. J. R. Lockwood, 1108 N. Lillian Way. GRanite 3177.

FOR RENT—Mitchell high speed gear box complete. Pliny Horne, 1318 N. Stanley, HO 7682 or GL 2791.



Complete Roster at Date of Publication

OFFICERS

JOHN F. SEITZ - - - - - - - - - - - - - - - - - - *President*
VICTOR MILNER - - - - - - - - - - - - - - - - *First Vice-President*
ARTHUR MILLER - - - - - - - - - - - - - - - *Second Vice-President*
CHARLES G. CLARKE - - - - - - - - - - - - - *Third Vice-President*
JOHN ARNOLD - - - - - - - - - - - - - - - - - - *Treasurer*
NED VAN BUREN - - - - - - - - - - - - - - - - - *Secretary*

BOARD OF GOVERNORS

John Arnold
John W. Boyle
Daniel B. Clark
Chas. G. Clarke
Ross Fisher
Alfred Gilks
Fred Jackman
Victor Milner
Hal Mohr
Arthur Miller
Harry Perry
Sol Polito
John F. Seitz
Ned Van Buren
Oliver Marsh

PAST PRESIDENTS

Philip E. Rosen
Homer Scott
Fred W. Jackman
James Van Trees
John W. Boyle
Gaetano Gaudio
Daniel B. Clark

Arthur Webb, General Counsel

HONORARY MEMBERS

Thomas A. Edison, Orange, N. J. George Eastman, Rochester, N. Y.
Albert S. Howell, Chicago

Allen, Paul H.—
August, Joe—Fox.
Abel, David—Pathe.
Arnold, John—M-G-M.
Archer, Fred—
Boyle, John W.—Mack Sennett.

Brown, Jas. S., Jr.—Cal. Studio.
Benoit, Georges—Paris.
Binger, R. O.—M-G-M.
Bell, Chas. E.—Ray-Bell Films, St. Paul.
Bauder, Steve L.—M-G-M.
Borradaile, O. H.—Paramount.

Carter, Claude C.—Australia.
Clark, Daniel B.—Fox.
Cotner, Frank M.—
Clarke, Chas. G.—Fox.
Cowling, H. T.—Eastman Kodak Co., Rochester, N. Y.
Chaney, George—United Artists.

Davis, Chas. J.—Fox Movietone.
DeVinna, Clyde—M-G-M.
Dored, John—Paramount News, Paris, France.
Dubray, Jos. A.—Bell & Howell, Chicago.
Dupar, E. B.—Warners' Vitaphone.
Dupont, Max—Vitacolor.
DeVol, Norman—R-K-O.
Dyer, Elmer G.—Free lance.
Dyer, Edwin L.—M. P. A. Studios, New Orleans

Edeson, Arthur—Fox

Folsey, Geo. J., Jr.—New York.
Fabian, Max—M-G-M.
Fisher, Ross G.—Multicolor.
Fildew, William—
Flora, Rolla—Fox.
Fetters, C. Curtis—Fox.

Gilks, Alfred—Technicolor.
Gray, King D.—Thunder Bay Film, Ltd.
Guissart, Rene—Elstree Studios, England.
Good, Frank B.—Warner Bros.
Gaudio, Gaetano—Warner Bros.
Greene, Al M.—Tec-Art.
Greenhalgh, Jack—F-B-O.

Hallenberger, Harry Paramount.
Hilburn, Percy—M-G-M.
Hyer, Wm. C.—Educational.
Horne, Pliny—
Haller, Ernest—First National.
Harten, Chas.—New York.
Herbert, Chas. W.—Fox Movietone, New York.

Jackman, Dr. Floyd, 1st Nat. Bank Bldg., Hollywood.
Jackman, Fred—Technical Director, Warner Bros.
June, Ray—United Artists.

Kershner, Glen—First National.
Koenekamp, H. F.—Warner Bros.
Kurrle, Robt. E.—Tec-Art.
Keyes, Donald B.—United Artists.

Lundin, Walter—Harold Lloyd, Metropolitan.
Lockwood, J. R.—
Lang, Chas. B.—Paramount.
Lanning, Reggie—M-G-M.
Lindon, Curly—Paramount.

Marsh, Oliver—M-G-M.
Miller, Arthur—Pathe.
Mohr, Hal—Universal.
McDonell, Claude—London, England.
MacWilliams, Glen—Fox.
Morgan, Ira H.—M-G-M.
Milner, Victor—Paramount.
Marta, Jack A.—Fox.

Nogle, George G.—M-G-M.

O'Connell, L. Wm.—Fox.

Parrish, Fred—Colorado Springs, Colo.
Pahle, Ted—Pathe, New York.
Palmer, Ernest—Fox.
Powers, Len—
Perry, Paul P.—United Artists.
Perry, Harry—Caddo Prod.
Polito, Sol—First National.
Pomeroy, Roy—

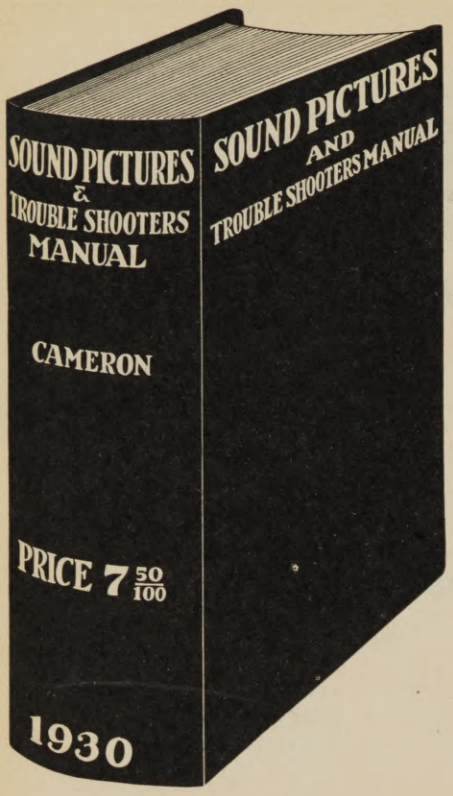
Roos, Len H.—Len H. Roos Laboratories, Hollywood.
Rose, Jackson J.—James Cruze Prod.
Rosher, Chas.—Elstree Studios, England.
Ries, Park J.—
Ritchie, Eugene Robt.—Lasky.
Rees, Wm. A.—Warner Bros. Vitaphone.

Schoenbaum, Chas.—Technicolor.
Stengler, Mack—F. B. O.
Stevens, George—Hal Roach.
Struss, Karl—United Artists.
Stumar, John—Universal.
Stumar, Chas.—Universal Pictures, Ufa Studios, Berlin—Neubabelsberg, Germany.
Sinzenich, Harold—Bombay.
Sharp, Henry—United Artists, Doug. Fairbanks.
Schneiderman, Geo.—Fox Movietone.
Scott, Homer A.—
Seitz, John F.—First National.
Snyder, Edward J.—Metropolitan.
Shearer, Douglas G.—M-G-M.
Stull, Wm.—
Smith, Jack.
Smith, Jean C.—

Tolhurst, Louis H.—M-G-M.
Tappenbeck, Hatto—Fox.

Van Trees, James—
Van Enger, Chas. J.—Fox.
Van Buren, Ned—Eastman Kodak Co., Hollywood.
Van Rossem, Walter J.—

Wagner, Sidney C.—Fox.
Walker, Joseph—Columbia.
Walker, Vernon L.—Warner Bros.
Wrigley, Dewey—Metropolitan.
Wyckoff, Alvin—United Artists.
Wenstrom, Harold—
Whitman, Phil H.—
Wilky, L. Guy—
Warrenton, Gilbert—Universal.
Williams, Frank D.—
Westerberg, Fred—United Artists.
Young, Jack R.—M-G-M.
Zucker, Frank C.—Photophone, New York.



Different from Anything Heretofore Published on the Subject

Just Published—Two New Books by Cameron

Sound Pictures

AND

Trouble Shooter's Manual

By James R. Cameron

Over 1,200 Pages—500 Illustrations

SOUND RECORDING AND REPRODUCING EQUIPMENT

How It's Constructed	Troubles to Be Expected
How It Works	How to Locate Source of Trouble
Why It Works	How to Remedy Trouble

The Whole Question of Sound Pictures Treated from an Entirely New Angle Explains in Detail the Construction, Operation and Care of Sound Recording and Reproducing Equipment.

A Complete Guide for Trouble Shooting

The Most Comprehensive Work on Sound Pictures Published

YOU WILL FIND A DAILY USE FOR THIS NEW BOOK

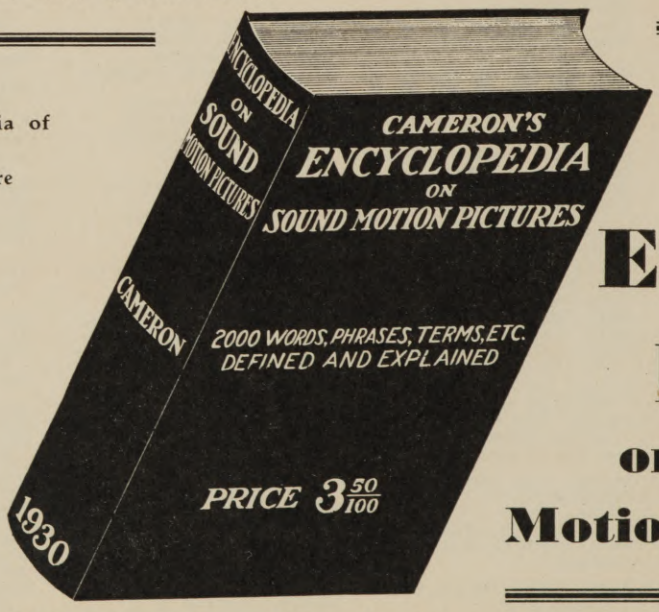
DEPT. OF COMMERCE, Washington, D. C.:
"These books should be in the possession of every projectionists, theatre manager and everyone interested in receiving first hand authentic information regarding the application of sound to motion pictures. Cameron's books are a very worth-while contribution to the motion picture industry."

DEPT. OF PUBLIC INSTRUCTION, Washington, D. C., Says:
"There are no series of books on Motion Pictures in the whole library of congress as much used as those by Cameron. We recommend them as a complete guide to the motion Picture Industry."

The First Encyclopedia of The Motion Picture Business

Over 2,000 Terms, Words, Phrases, Etc., Etc. Defined and Explained.

Price $3.50



Cameron's

Encyclopedia

on Sound Motion Pictures

Cameron Publishing Co., Manhattan Beach, Brooklyn, N. Y.

Make this Test

EASTMAN Panchromatic Negative, Type 2, gives you ample speed... unsurpassed latitude...unique fineness of grain...splendid rendition of shadow detail...a tough, wear-resisting base...plus "Pan's" primary function, true panchromatic balance. Test Type 2 for all of these qualities.

EASTMAN KODAK COMPANY

ROCHESTER, NEW YORK

J. E. Brulatour, Inc., Distributors

New York Chicago Hollywood

Experimental Stage Passed on Wide Film Camera

THE DEVELOPMENT of any new product always entails a large amount of experimental work and expense before the product is completed and ready for the market. Our development laboratory has worked for years towards the perfecting of a Wide Film Camera which resulted in our 70 MM. MITCHELL-GRANDEUR camera. This camera is a finished product and was used in filming the Grandeur pictures now being shown.

The MITCHELL 70 MM. camera eliminates the necessity for costly experiments with untried cameras at the studio and enables the producer to start production at once.

CAMERAS ARE NOW AVAILABLE

MITCHELL CAMERA CORPORATION

665 N. Robertson Blvd. West Hollywood, Calif.

Cable address "MITCAMCO" *Phone OXford 1051*